ERS-400

THE DOMESTIC WOOL MARKETING SYSTEM

U.S. DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE

PREFACE

The report covers all major channels of the domestic raw wool marketing system, and deals with the problems, practices, and operations of wool producers, local pools, warehouses, and processors. It is based on separate studies of these groups during 1964-66. The studies were partially financed by The American Farm Bureau Federation and The National Wool Marketing Corporation. Members of their Wool Marketing Advisory Committee assisted in planning this study and contributed to the development of questionnaires used in collecting the data. Louis Rozzoni was chairman of the Advisory Committee until his death, and was succeeded by Ben Howard. Other members of the committee are Ray Hearing, Ralph Horine, and Lehi Jones of the National Wool Marketing Corporation, and Kenneth Hood and Herman Aaberg of The American Farm Bureau Federation. ERS was responsible for assembling and analyzing the data in this study. Special credit is due Amos D. Jones, ERS, who assisted the author in planning research methods and collecting data.

Washington, D. C. 20250 March 1969

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SUMMARY

During the past 20 years, the domestic wool industry declined in almost every phase of production, marketing, and processing. The decline reflects, among other things, lack of information on improving the quality and preparation of wool clips--especially small ones--and on effective pricing.

A survey in 1964-66 of producers, warehouse operators, local pool directors, and major wool processors showed that all segments of the industry had problems which had no easy solution. The survey information did not always provide objective guides to solving these problems, but alternative practices are suggested that would permit each segment to take advantage of new technology or combination of procedures in upgrading its operations. These practices are outlined in detail in the final section of the report; their use would help the wool industry to improve its marketing practices, reduce the total marketing bill, and deliver to processors the types of wool required.

THE DOMESTIC WOOL MARKETING SYSTEM

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BACKGROUND AND SCOPE OF PROBLEM

Increasing cost of operations along with the apparent inability to proportionately increase wool production and marketing efficiency has resulted in relatively low returns to U.S. sheep and wool enterprises. Support prices established under the National Wool Act of 1954 partially reduce the relative disadvantage of domestic wool enterprises, but the tariff imposed upon wool imports holds domestic wool prices artificially high and thereby reduces the total quantity demanded. U.S. mills, which are essentially the only outlet for domestic wools, have experienced a decline in wool consumption over the past 13 years. This decline has resulted primarily from the competitive effects of imported foreign wool products and from other fibers, both foreign and domestic (table 1).

Following this trend, domestic production of shorn grease wool also declined from a postwar peak in 1960 to its lowest level in 90 years (fig. 1).

Although wool produced in the United States compares favorably in basic quality with that of the major wool producing countries, it lacks the general uniformity and mill desirability of the foreign product because of producer emphasis on lamb production, improper shearing, inferior preparation in the marketing system, and insufficient incentives to improve the quality of the clip under existing marketing practices and costs.

Stabilizing domestic wool production or increasing it to a level of about 300 million pounds as called for in the National Wool Act 1/ can be achieved only if higher levels of efficiency are developed and applied in the areas of production, marketing, and market development. Problems in all of these broad areas have contributed to the general decline in domestic wool production.

Efforts to solve many problems have not been wholly successful because the wool industry has not agreed upon common goals and the means to achieve these goals. This results in part from producers' attitudes originating in the economic concept referred to as joint products. Joint products are "things which cannot easily be produced separately; but are joined in a common

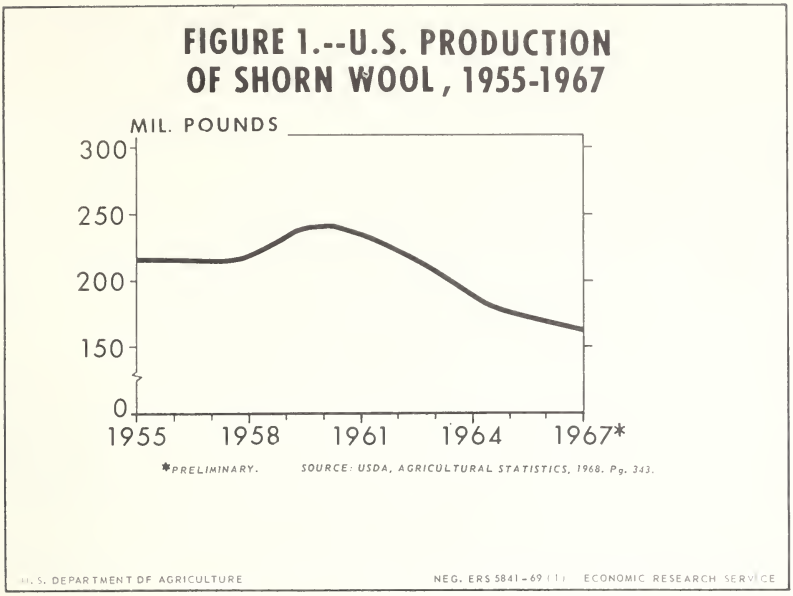
1/ Public Law 690, 83 Congress, 68 Stat. 897.

Table 1.--U.S. mill apparel wool consumption, imported products, and U.S. consumption and exports, 1955-67

Year	U.S. mill wool consumption 1/		Imported textile products 2/			U.S. consumptions and exports 2/			Wool's proportion of U.S. mill total fiber consumption
	Domestic	Foreign 3/	Man-made	Cotton	Wool	Man-made	Cotton	Wool	
	Million pounds								Percent
1955...	168.4	112.8	7.0	87.0	81.4	1,997.1	4,732.2	368.1	6.2
1956...	192.9	103.8	8.8	108.0	91.1	1,828.5	4,725.2	393.5	6.7
1957...	162.7	78.2	9.5	95.6	85.2	1,899.7	4,434.0	330.7	5.9
1958...	144.9	67.1	13.2	112.2	90.2	1,867.8	4,229.2	306.8	5.5
1959...	164.4	100.5	33.6	172.9	126.9	2,195.0	4,743.8	396.7	6.4
1960...	172.1	74.3	31.3	252.3	132.1	1,999.9	4,676.5	383.2	6.3
1961...	172.8	90.3	23.5	188.9	127.4	2,170.6	4,509.6	395.0	6.3
1962...	154.4	125.8	30.6	309.8	145.6	2,539.6	4,718.1	430.2	6.1
1963...	142.1	109.2	36.2	304.3	152.5	2,921.1	4,552.3	409.4	5.7
1964...	135.5	98.4	50.0	300.2	141.1	3,332.8	4,757.8	382.0	4.6
1965...	112.1	162.6	79.0	360.6	156.1	3,839.1	5,011.9	446.4	4.5
1966...	104.1	162.5	122.3	507.0	142.9	4,271.9	5,327.1	422.2	4.1
1967...	4/ 119.6	4/ 109.1	137.6	438.5	121.8	4,516.8	5,047.6 4/	361.2	4/ 3.5

1/ Clean content.
2/ Raw fiber equivalent.
3/ Excludes duty-free wool.
4/ Preliminary.

Source: Compiled from Textile Organon, March 1968, p. 52, and Agricultural Statistics.



origin. . .such as beef and hides, or wheat and straw." 2/ Wool and lamb or mutton are basically joint products, and in some respects also alternative products. Perhaps contrary to general belief, there is evidence to show that sheep bred for improved lamb conformation and size need not lower the wool clip's weight or quality. Even so, producers in different areas have tended to specialize in either one of these products at the expense of the other. In particular, most producers in the Atlantic and Central Regions of the country generally cross-breed to improve lamb conformation and size, and pay little or no attention to the adverse effect their efforts have on the weight and quality of the wool clip. Sheep producers in Texas and New Mexico tend to concentrate their efforts on producing wool and are not generally concerned so much with the consumer qualities of their lambs. In the Western States many producers tend to consider wool and lamb as joint products and not primarily as alternatives.

Several research programs which are still underway are based on the concept of duality in sheep production. Information from these experiments may provide the sheep industry some relief from competitive forces, and enhance its relative position among alternative enterprises.

Problems underlying the decline in domestic production of shorn wool are neither simple to conceive nor easy to solve, nor can any single study adequately cover all these problem areas. Numerous studies on wool have been

2/ Alfred Marshall (23, p. 388). Underscored numbers in parentheses refer to items in the Bibliography, p. 64.

made which limited their scope of investigation to: production and marketing costs (31, 7, 33, 17, 32, 3, 24), efficiency in warehouse and pooling operations (35, 19, 38, 36,), transportation and handling costs (20, 12), wool market news and classification (15, 25), pricing and quality measurements (18, 8, 9, 13, 5, 26), consumer preferences (4, 22, 37, 10), wool procurement costs and attitudes of textile mills (11, 3, 16), and many other specific areas of wool production and marketing.

This study takes a broad overlook at the domestic wool marketing system--how it operates, the interaction between production and marketing efficiency, and what improvements might help the system as a whole. Through this system, pricing mechanisms operate to inform producers of the quality and quantity of wools consumers desire, and through which incomes to producers and marketers are determined. Borne directly or indirectly by the producer, the cost of marketing raw wool often amounts to as much as 30 percent of his income from wool. Efforts by producers and marketing agencies to properly adjust their practices and reduce these margins are considerably hampered by a lack of information regarding significant changes in the structure, location, and practices in the wool trade. Central market dealers who use to purchase wool from local warehouses and producers, prepare it for market, and sell it to mills have practically disappeared. Consequently, the mills had to alter their procurement practices and now buy most of their wool direct from producers and handlers in local markets. Thus, the problem of assembling wools into merchantable lots in the producing areas has become acute. Also, changes in location, type of processing equipment, and size of firm have changed mill requirements for marketing services. The suddenness and scope of these and other changes emphasized the need to evaluate the adequacy of the domestic wool marketing system. To provide stability in the domestic wool industry while augmenting the marketing and disposal of wool and wool products requires (1) adequate supplies of wool available at competitive prices, (2) an efficient market system for assembling, preparing, and delivering wool to processors, and (3) efficient manufacture of a variety of wool products.

OBJECTIVES

The primary objectives of this study are (1) to determine the organization, policies, services, charges or costs, and practices of local, regional, and national wool marketing and processing firms; (2) to analyze the direct and indirect effects that production patterns and practices have on marketing efficiency and, consequently, producer incomes; and (3) to specify opportunities for improving the marketing of wool and to develop recommendations for implementing the more desirable means through which these improvements may be implemented.

To achieve these objectives, attention was focused on four basic groups in the marketing system. These were the wool producers located throughout the continental United States, local wool pools which are mostly in the Eastern and Northwestern States, wool warehouses, and processors that purchase domestic grease wool.

Wool Producers

An estimated 215,000 producers received income from marketing wool in 1965. 3/ These receipts were a major source of income for some producers, but for most of them it represented only a small part of their total income. Therefore, several different viewpoints toward the production and marketing of wool developed among producers. The amount of concern among producers about production and marketing problems can be partially measured by how much, in an economic sense, individual wool producers have at stake. Such an understanding would provide a clearer basis for directing any efforts to improve the wool marketing system, and for determining the extent to which producers might benefit from any of these improvements.

To obtain information from a representative number of producers, wool incentive payment records on file in State statisticians' offices were randomly sampled after grouping them according to six major production and marketing areas (fig. 2). More than 2,800 of the 5,500 producers contacted by mail questionnaires responded. This number of responses is more than twice the normally expected response to a mail survey and shows that sheep producers are concerned with today's wool marketing problems. 4/

Market Concepts and Definitions

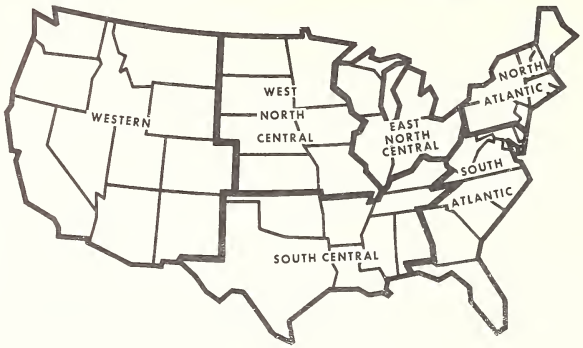
As a comparatively nonperishable commodity, wool can be produced great distances from major market centers. It can be stored over long periods of time without significant quality deterioration. Hence, market areas for wool are often defined by differences in transfer costs. In this study, however, each of six geographic regions is assumed to be a general market area, without explicit reference to transfer costs. Although competitive forces with respect to individual producers tend to operate within smaller geographic boundaries, it is reasoned that major differences in wool quality, preparation, and marketing practices among Regions provide a basis for market analysis more in keeping with the objectives of this study than do transfer costs. Admittedly, aggregation limits the preciseness of study results. Nevertheless, it does provide means for comparing basic trends and relationships.

Another assumption made in this study is that each wool producer operates in a purely competitive sellers' market (i.e., he is a price taker), but that buyers may not always operate in a purely competitive buyers' market (i.e., they may be price makers). Each producer's contribution to the market supply is so relatively small that he cannot appreciably affect market price or the quantities of wool marketed by other producers. A producer can sell all his wool at current prices, but none of his wool if he is unwilling to accept the

3/ This estimate is based upon information from ASCS incentive payment summaries, and the sample of wool producers surveyed in this study.

4/ USDA experience has shown that response from producer groups to mail surveys usually amounts to about 25 percent. The response to this survey was nearly 52 percent.

FIGURE 2.-- PRODUCTION AND MARKETING REGIONS USED IN STRATIFYING WOOL GROWER DATA, 1964



prevailing market prices. Wool buyers, however, may be able to discriminate in the prices they pay for similar wool in a given area because of their relative bargaining power.

Marketing Efficiency and Income to Producers

The system for marketing domestic grease wool reflects, among other things, the variety of differences in the location and concentration of wool production, and the extent of quality variations in wool. When the domestic marketing system is compared with the marketing systems of other countries, it may seem remarkable that portions of our domestic clip ever reach the processors, and at prices competitive with other fibers (at least in the short run). While the bulk of the domestic clip is channeled through a system of warehouses, producers also market their wool through local dealers without warehouses 5/, local pools, and directly to the processors. It would be difficult to visualize a marketing system composed of a single type of marketing agency operating equally well under all the conditions imposed by production patterns and by mill use requirements. For example, many Atlantic and Central Region producers have small clips. This situation led to the development and establishing of local wool pools which assemble these clips into more economical units at relatively low cost, and give the producers increased bargaining power.

5/ Local dealers without warehouse facilities frequently act as purchasing agents for established warehouses. Consequently, the wool purchased by most local dealers is eventually handled by warehouses.

However, local pools also developed in the West where the clips of only a few producers may be greater than the largest pool assembled in the Eastern Regions. These pools may also operate in the immediate vicinity of one or more warehouses, which may be a dealer (will only purchase wool), a handler (will only consign wool), or a dealer-handler warehouse (will purchase or consign wool).

There are two basic reasons for a divergency of agency types within our marketing system. The first pertains to the manner of organization, size, and concentration of wool production units. For any given cost structure, lower unit costs usually result from increased volumes of wool produced and marketed. As the average size of clip in an area decreases, the unit cost of assembling, preparing, and marketing usually increases. Some marketing agencies, such as local pools, are so organized that their assembly and preparatory out-of-pocket costs can apparently be reduced to levels below those of other marketing outlets. 6/ Producers provide their own transportation to the assembly points, and may also volunteer to perform the functions of bookkeeping, handling, packing, etc. Preparatory services such as fleece grading, removal of crutchings, and core testing are usually omitted from pool operations and so these costs are not directly incurred. 7/ Warehouses, on the other hand, may not be as flexible in their operations. Investment in buildings and equipment must be amortized so that the cost of operation is spread out over all wool handled. Of course prices received by producers may be improved to such an extent that they more than offset any additional costs over local pool operations. The difference, however, may not be apparent to the producers.

That brings us to the second basic cause for variation in the organization of the domestic wool marketing system. No matter how efficient a marketing agency may be potentially, if it is not adequately patronized by producers it cannot realize any real measure of success. Some areas, such as Texas, are faced with excess warehouse capacity and only consolidation or an increase in wool production could provide for more efficient use of these facilities. However, production figures in the Midwest and Western Regions indicate a current possibility of making more efficient use of existing warehouse facilities. The problem in these areas is one of insufficient patronage.

It can be assumed that producers wish to maximize their returns from wool production, but subject to certain limitations. The smaller the proportion wool receipts are of a producer's total income, the less apt he is to make the effort necessary to maximize his returns from wool. As a group, the very small producers are not likely to be greatly concerned about improved breeding, feeding, and management practices, proper shearing and preparation of fleeces, or about market conditions at time of shearing. These producers usually sell to the first buyer who makes an offer, or some may place their wool in burlap bags and store them where the wool may deteriorate, such as in a leaky barn, until the local pool assembles. Conversely, producers of larger clips, whose total income depends a great deal more upon their wool receipts, will maximize

6/ While these out-of-pocket costs are reduced, they are borne directly as opportunity costs by the producers who may perform marketing functions themselves.

7/ The cost of not performing these operations, however, is usually reflected in the discounts buyers may include in their bid, whether implicit or explicit.

their efforts to receive income from wool. In addition, these producers try to sell through the marketing outlet which gives them the greatest net return. To some producers this may mean selling directly to the mill.

If this assumption is valid, it would benefit marketing agencies to know the relative distribution of producers according to their income from wool receipts. An estimation of such a distribution has been made, based upon the producer survey in this study, wool incentive payment summaries, and production and price estimates. The estimated distribution of wool producers and wool receipts in 1964 and the proportion of total wool receipts the various groups of producers received is shown in table 2. According to these estimates, about

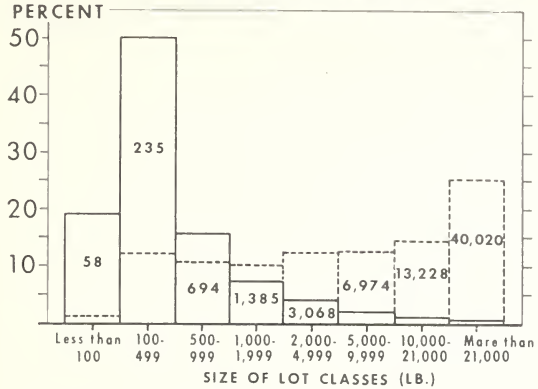
Table 2.--Estimated number of wool producers and wool marketing receipts, by average size of lot marketed, 1964

Size of lot (pounds)	Producers	Percentage of producers in each class	Marketing receipts 1/	Percentage of total receipts	Ratio of receipts distribution to producer distribution
	Number	Percent	$1,000	Percent	
Less than 100.	41,088	19.1	1,558	1.1	0.058
100-499.....	107,971	50.2	16,304	12.0	0.239
500-999.....	33,841	15.8	14,366	10.5	0.665
1,000-1,999...	15,486	7.2	13,366	9.8	1.361
2,000-4,999...	8,755	4.1	16,630	12.2	2.976
5,000-9,999...	3,990	1.9	17,043	12.5	6.579
10,000-21,000.	2,422	1.1	19,580	14.4	13.091
More than 21,000.....	1,370	0.6	33,271	27.5	45.833
Total....	214,923	100.0	132,119	100.0	4.000

1/ Includes wool incentive payments.

19 percent of all wool producers in 1964 marketed less than 100 pounds of wool, and as a group received about 1 percent of the total wool receipts that year, including market income and incentive payments. More than 69 percent of the producers marketed less than 500 pounds of wool each, and yet they received only about 13 percent of total wool receipts. At the other end of the scale are producers who marketed 2,000 pounds or more and received about two-thirds of the total wool receipts. The proportion of total wool revenues received by each size group is shown in figure 3. The two groups at opposite ends of the scale represent a range of about 59 pounds to 40,000 pounds in average size of lot marketed, and from about $38 to $24,285 in average income from wool.

FIGURE 3.--ESTIMATED PROPORTIONS OF WOOL PRODUCERS AND WOOL MARKETING RECEIPTS, BY AVERAGE SIZE OF LOT IN UNITED STATES, 1964



SOLID LINE RELATES TO THE PERCENT OF TOTAL NUMBER OF PRODUCERS IN EACH SIZE OF LOT CLASS.
BROKEN LINE RELATES TO THE PERCENT OF TOTAL MARKETING RECEIPTS IN EACH SIZE OF LOT CLASS.
NUMBERS INSIDE BARS ARE AVERAGE SIZE OF LOTS MARKETED FOR EACH CLASS.

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As pointed out above, the cost of assembling and preparing wool from these two groups may vary, depending upon the type of marketing organization. This cost, however, must also include any difference between the income received for a lot of wool and its "true" market worth. For instance, a wool producer who sold his clip outright might have received more for his wool had he instead consigned it to a warehouse or local pool to prepare and market for him. The difference between the amount he received for his wool and what he could have received is the producer's opportunity income. Individually, these differences will not be substantial for producers who only market an average of 59 pounds of wool annually. As a group, however, the differences can be significant, and the significance grows as the average size of lot marketed increases. Before deciding to eliminate or reduce marketing charges by dealing directly with the buyers, producers should consider the opportunity incomes they may be forfeiting through their loss of bargaining power.

An example of how marketing organization is associated with producer gross incomes from wool can be seen in table 3. The three Regions in which a large proportion of producers consigned their wool to local pools or to warehouses show the best performance among producers who marketed less than 500 pounds of wool. Performance is measured in terms of the relative proportion of total wool receipts each class of producers received. In the North Atlantic, South

Table 3.--Estimated distribution of wool producers and proportion of wool receipts, by size of lot and Region, 1964 1/
[Prod. = Producers; Rec. = Receipts]

Size lot (pounds)	North Atlantic		East North Central		South Atlantic		South Central		West North Central		West		United States	
	Prod.	Rec.	Prod.	Rec.	Prod.	Rec.	Prod.	Rec.	Prod.	Rec.	Prod.	Rec.	Prod.	Rec.
	Percent													
Less than 100	27.1	5.0	21.7	4.0	35.9	10.2	13.9	0.5	15.8	1.4	18.2	0.4	19.1	1.2
100-499	56.0	40.7	60.9	40.9	54.9	51.1	39.2	6.2	53.1	20.3	34.1	3.4	50.2	12.3
500-999	11.9	25.2	12.5	25.9	7.4	23.1	17.0	6.1	18.7	20.4	17.4	4.5	15.8	10.9
1,000-1,999	4.1	18.9	3.7	15.3	1.3	6.9	13.4	11.7	6.5	13.7	11.9	6.4	7.2	10.1
2,000-4,999	0.7	6.3	1.0	8.5	0.4	4.9	7.5	14.5	4.4	21.8	7.3	8.4	4.1	12.6
5,000-9,999	0.2	3.5	0.1	4.0	0.1	3.8	4.7	20.3	1.0	10.6	5.1	13.0	1.9	12.9
10,000-21,000	*	0.4	*	1.4	--	--	3.2	25.5	0.5	11.8	3.1	14.9	1.1	14.8
More than 21,000	--	--	--	--	--	--	1.1	15.2	--	--	2.9	49.0	0.6	25.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Based upon wool incentive payment summaries, production and price estimates, and producer survey in this study.

* Less than 0.05 percent.

Atlantic, and East North Central Regions, the proportions of producers and of total wool receipts in the less than 500 pound size group were more nearly alike than for comparable size groups in the Western, West North Central, and South Central Regions. In these latter three areas, local dealers perform the function of assembling small clips, usually by having commissioned representatives traveling about the area and purchasing wool directly from producers. This tends to be a more costly process and apparently is reflected in lower returns to producers.

Producers with larger clips are more inclined to transport the wool to warehouses and either sell it to the warehouseman or consign for later sale, usually to topmakers and manufacturers. By consigning, producers take advantage of warehouse services from which they hope to realize additional gain. Some producers of larger clips market their wool through local pools, especially in the Northwest; others ship their wool directly to buyers without warehousing it (19). Because of this it is difficult to make comparisons similar to those for small producers. It can be noted, however, that producers in the West North Central Region who marketed 1,000 pounds or more received a greater proportion of total wool receipts than did their counterparts in the South Central and Western Regions. The only exception was for producers of the largest size group in the West; this indicates that marketing operations in this Region are organized in such a way as to be most efficient in handling clips of 1,000 pounds or more. Even with smaller volumes, producers in this Region receive proportionately more of total wool receipts than their counterparts in the South Central and Western Regions, although less than those in the North and South Atlantic Regions. Several factors are reflected in these conditions, however, and should be considered before making definitive evaluations. Among the factors are differences in: the quality of wool produced in these Regions; the type, size, and number of marketing agencies which operate within these Regions; variations in the marketing services offered and cost of operations; the regional distribution and concentration of producers by size of lot; and cost of transporting wool to mills.

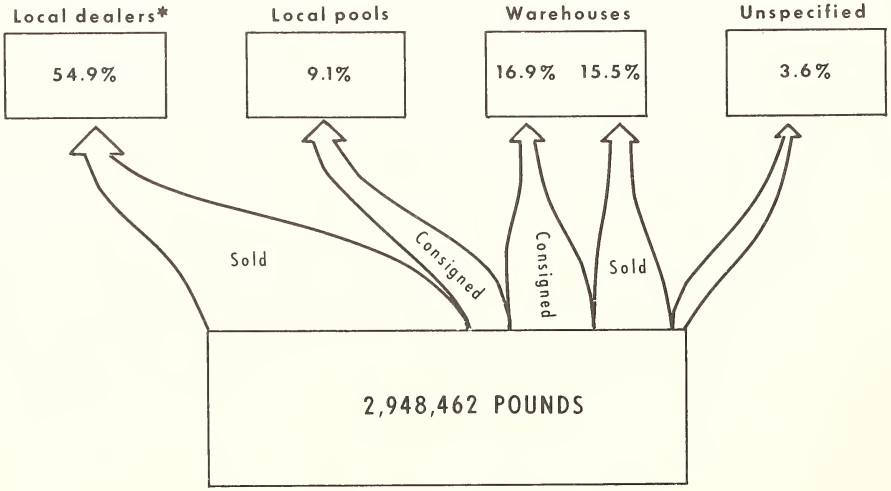
Although the level of marketing efficiency is determined to a great extent by factors beyond the control of individual producers, group behavioral patterns can affect marketing efficiency indirectly, which in turn has an impact on producer income.

Marketing Channels for Wool--Purchased and Consigned

Because the basic structure of production and marketing enterprises does not change significantly from one year to the next, production and marketing patterns of wool producers also tend to remain relatively stable. Response from the 2,803 producers shows that they sold about 70 percent and consigned 26 percent of their wool to marketing agencies in 1964 (fig. 4). 8/

8/ If it is assumed that producers who failed to specify how they marketed their wool were divided along the same lines as those who did, then 73 percent of the wool was sold and 27 percent was consigned.

FIGURE 4.-- MARKETING PATTERNS OF 2,803 WOOL PRODUCER RESPONDENTS, 1964



*INCLUDES A SMALL PORTION OF WOOL SOLD DIRECTLY TO MILLS AND TO PRIVATE WAREHOUSES.

Any wool handled by dealers is through direct purchase, and more than half, or 55 percent of the nearly 3 million pounds of wool in the sample was reported sold to local dealers without warehouses. Warehouses purchased about the same volume as they consigned for a total of 32.4 percent. More than 17 percent of the producers said they marketed their wool through local pools, but this amounted to only 9 percent of the total wool volume reported. This would indicate, as before, that local pools generally handle smaller clips.

Regional flow patterns varied, mostly because of differences in marketing structure. For example, local pools handled 89 and 98 percent of the consignment wool in the South and North Atlantic Regions (table 4). In the other four Regions, warehouses did most of the consignment business. Over three-fourths of the wool sold directly to marketing agencies was purchased by local dealers, in every Region except in the South Central Region, where local dealers purchased 54 percent of the nonconsigned wool. This was also the only Region where local dealers or local pools did not handle at least 60 percent of the total wool volume marketed by producers. The major reason is the large number of warehouses in Texas, which are included in South Central Region data. Many of these are commission warehouses, which explains why 92 percent of the wool consigned in this Region was handled by warehouses.

It would be convenient if the marketing structure in each Region could be meaningfully characterized by the type of marketing outlet handling the largest volume of wool. Such a characterization would result in one warehouse Region (South Central), two local pool Regions (North and South Atlantic), and three local dealer Regions (East, West North Central, and Western) (table 4). However, this classification does not reflect the fact that many of the local dealers operating in the two North Central Regions purchase wool for warehouse accounts. 9/ This type of buying operation is particularly common in these two areas, both of which have sizable numbers of small clips, few local pools, and several large wool warehouse organizations which compete actively for wool volume. Some of these warehouses allegedly prefer to handle consigned wool instead of purchased wool, but find that local dealers acting as field representatives are unable to solicit consignments from many producers. Results from this study indicate two primary reasons: (1) producers of small clips, which are the primary target of local dealers in these areas, are not generally inclined to consign their wool and wait for their return because of the small amount of returns involved, and (2) producers usually are willing to consign only to well established and usually local warehouses with which they are familiar. The average size of lots purchased by local dealers and warehouses in the North Central Regions were about the same, but they were less than half of the average size lot consigned in the West North Central Region (table 5). Nationally, there was about a 150-pound difference between the average size lot consigned and purchased by all marketing agencies.

9/ Wool handled on "warehouse account" refers to wool purchased by the warehouse. Consignment wool is handled by the warehouse for a commission, and the producer maintains title to the wool. Some wool is handled for storage or loading only, and the warehouse usually assesses a service charge.

Table 4.--Sample wool producers' outlets: Percentage and total number of consignments, direct sales, and total pounds of wool, by agency and Region, 1964

Item	Unit	Region					
		North Atlantic	East North Central	West North Central	South Atlantic	South Central	Western
Producers consigning to:							
Local dealers	Pct.	--	--	--	--	--	--
Pools	do.	95	21	91	33	62	--
Warehouses	do.	5	79	71	9	67	38
Total	do.	100	100	100	100	100	100
Total number	No.	177	91	144	143	142	122
Producers selling direct to:							
Local dealers	Pct.	82	89	85	78	71	75
Pools	do.	--	--	--	--	--	--
Warehouses	do.	18	11	15	22	29	25
Total	do.	100	100	100	100	100	100
Total number	No.	91	583	675	82	211	273
Total wool consigned:							
Local dealers	Pct.	--	--	--	--	--	--
Pools	do.	98	15	14	89	8	43
Warehouses	do.	2	85	86	11	92	57
Total	do.	100	100	100	100	100	100
Total pounds	Lb.	58,014	32,250	145,767	32,340	168,253	329,574
Total wool sold:							
Local dealers	Pct.	87	89	83	78	54	77
Pools	do.	--	--	--	--	--	--
Warehouses	do.	13	11	17	22	46	23
Total	do.	100	100	100	100	100	100
Total pounds	Lb.	25,625	183,724	373,022	15,179	143,840	1,334,528
Total consigned and sold:							
Local dealers	Pct.	26	76	60	25	25	662
Pools	do.	68	2	4	60	4	8
Warehouses	do.	6	22	36	15	71	30
Total	do.	100	100	100	100	100	100
Total pounds	Lb.	83,639	215,974	518,789	47,519	312,093	1,664,102
Unspecified 1/	Pct.	--	4	1	1	2	5
Total pounds	Lb.	--	7,986	6,153	329	6,375	85,503

1/ Figures are computed as a percentage of each regional total of pounds of wool sold, consigned, and unspecified.

Table 5.--Number of consignments, direct purchases, total and average pounds of wool, by agency and Region, 1964

Agency and regions	Number of consignments	Total pounds consigned	Average size of lot consigned	Number of direct purchased	Total pounds purchased	Average size of purchased
	Number	Pounds	Pounds	Number	Pounds	Pounds
Local dealers: 1/						
North Atlantic	--	--	--	75	22,258	297
East N. Central	--	--	--	519	163,816	316
West N. Central	--	--	--	572	311,319	544
South Atlantic	--	--	--	64	11,845	185
South Central	--	--	--	150	77,088	514
Western 2/	--	--	--	204	1,031,338	5,056
Total dealers	--	--	--	1,584	1,617,664	1,021
Local pools:						
North Atlantic	168	56,673	337	--	--	--
East N. Central	19	5,855	256	--	--	--
West N. Central	42	20,933	498	--	--	--
South Atlantic	130	28,696	221	--	--	--
South Central	47	14,192	302	--	--	--
Western	75	141,755	1,890	--	--	--
Total pools	481	267,104	555	--	--	--
Warehouses:						
North Atlantic	9	1,341	149	8	3,367	210
East N. Central	72	27,395	380	64	19,808	311
West N. Central	102	124,834	1,224	103	61,703	599
South Atlantic	13	3,644	280	18	3,334	185
South Central	95	154,061	1,622	61	66,752	1,094
Western	26	187,819	3,996	69	303,190	4,394
Total whse	338	499,094	1,477	331	458,254	1,384
Grand total	819	766,198	936	1,915	2,075,918	1,084
Regional totals:						
North Atlantic	177	58,014	328	91	25,625	282
East N. Central	91	32,250	354	583	183,724	315
West N. Central	144	145,767	1,012	675	373,022	553
South Atlantic	143	32,340	226	82	15,179	185
South Central	142	168,253	1,185	211	143,840	682
Western	122	329,574	2,701	273	1,334,528	4,888

1/ Local dealers without warehouses, private warehouses, and processors.
2/ Many of the larger clips in this group were sold directly to processors.

Part of the difficulties in obtaining consignment business has been attributed to the incentive payment program of the National Wool Act. It has been suggested that the program encourages producers to sell their wool instead of consigning it to marketing agencies. No doubt this contention is due largely to the fact that wool consignments have declined since the beginning of the wool payment program; therefore, some argue that the program was responsible for the decline.

Beginning in August 1947, price support for shorn wool was provided by CCC purchases of shorn wool through federally approved wool handlers. This program continued through 1949. With the outbreak of the Korean war in May 1950, wool prices rose to a record high. Standby support programs for wool were maintained in the 1950 and 1951 marketing years, but no purchases were made because market prices were substantially above the support levels.

Beginning with the 1952 marketing year, the price of shorn wool was supported by means of price support loans. Under the program, loans were made through approved handlers for the benefit of producers who maintained title and beneficial interest in the wool. One portion of the eligibility requirement for a loan was that the wool must have been received by the handler from the original producer and the producer must have had title and beneficial interest in the wool. The producer must have designated an approved handler to act as his representative in pledging the wool as security for a loan. In addition, the wool had to be stored in CCC-approved warehouses. It was, therefore, necessary for a producer to consign his wool to a handler if he desired to take advantage of the Government price support program and the level of consignment nationally was high.

Under the current program, producers sell their wool in normal marketing channels by whatever means they deem most advantageous. Consignment is not required but is an individual choice. At the end of the marketing year, when the average price received for wool is known, payments are made to bring the national average price received by all producers up to the incentive level. The current program encourages the producer to sell his wool for the greatest net return, because the higher his price, the more he receives as incentive payment. The proportion of the total clip consigned declined since the payment program began, probably because producers no longer have to consign and some feel they can benefit more by disposing of their wool in some other way. A few producers may still think that they will receive the incentive level "price" regardless of how much they receive for their wool in the open market. A little arithmetic would soon correct this misunderstanding. It therefore seems questionable to compare directly the relative importance of consignment transactions today when producers have greater freedom of action, with periods when benefits of the price support program were contingent upon producers consigning their wool and to suggest that the National Wool Act discourages consignments. It merely does not require consignment for compliance.

Producer Evaluation of Marketing Outlets

Regardless of whether a producer chooses to sell directly or consign his clip each year, he must select a marketing firm. An important measure of success for any wool marketing firm is the extent to which producers are satisfied with marketing services and continue to patronize the same firm. A majority of producers in this study responded that they intended to market their wool through the same outlet the following year. Ten percent of all the producers indicated they would change marketing outlets the following year because they were dissatisfied (table 6). Most of them gave as their reasons either (1) lack of competition among marketing firms, (2) low wool prices, or (3) high marketing charges. However, nearly 23 percent of the producers with alternatives expressed intentions to change marketing outlets the following year. This would indicate considerable dissatisfaction among wool producers.

Table 6.--Proportion of sample wool producers in 1964 who said they intended to market their wool through a different outlet the following year (1965) 1/

Current marketing agency	Regions						
	North Atlantic	East North Central	East West Central	South Atlantic	South Central	Western	All Regions
	Percent						
Local dealers.	6.7	10.6	9.8	6.3	9.3	15.2	10.4
Local pools...	7.1	5.3	9.5	4.6	12.8	10.7	7.7
Warehouses....	8.0	8.8	7.8	12.9	7.1	14.7	9.3
All.....	7.1	10.1	8.9	6.2	8.8	14.2	9.7

1/ Producers in each Region answered the question by checking either yes or no. The sum of all three groups (yes, no, nonrespondents) represents 100 percent of the respondents in each Region. Overall, about 7 percent of the respondents failed to answer the question.

Proportions of wool producers indicating they would change varied by Region and type of marketing firm. There were proportionately fewer dissatisfied respondents in the South Atlantic Region. More than 14 percent of the producers in the Western Region expressed intent to change marketing outlets. Local pools had proportionately fewer dissatisfied customers than did any other type of marketing agency. Local pool customers are also members, which may help to explain why fewer of them were dissatisfied with their pooling operations. Overall, the least successful type of marketing agency in terms

of satisfied producers was the local dealer. However, there were also Regions in which local dealers outperformed the other types of marketing agencies.

In general, differences among regional proportions of dissatisfied producers were greater than those among marketing agencies. This suggests that producers within a Region often face similar marketing conditions, regardless of the type of marketing firm they deal with. Consequently, their dissatisfaction is not confined to a particular type of marketing agency, except in isolated cases or in areas where a particular type of agency dominates the marketing structure.

The assumption that dissatisfaction among producers is expressed by intentions to change market outlets is limited. Fifty-nine percent of the producers who sold their wool and 62 percent of those who consigned, indicated they knew of no outlet for marketing their wool other than the one they were presently using (table 7). Marketing agencies should determine if those producers who indicated returning to the same outlet did so because they are satisfied with marketing services, or because they are unaware of alternative outlets. These results suggest a strong potential for increased public relations efforts by firms to improve their competitive position.

Table 7.--Proportion of sample wool producers indicating awareness of alternative marketing outlets, 1964

Number of alternative marketing outlets	Producers responding who:	
	Sold	Consigned
	-Percent-	
None	59	62
1	23	22
2	10	9
3	5	4
4 or more	3	3
Total	100	100

Producer Need for Marketing Assistance

One of the most essential and basic services a wool marketing agency can offer a producer is the current market evaluation of his clip. Most producers are not able to accurately judge the quality of their wool and consequently are unable to determine its market value. Only one-third of the producers

surveyed in this study indicated they were able to determine the quality of their wool (table 8). Of those who marketed less than 100 pounds, fewer than 20 percent of them could make such a determination. As a rule, a larger proportion of producers were able to determine the quality of their wool as the average size of lot marketed increased. Half of those producers who marketed at least 10,000 pounds of wool said they were able to determine its quality.

Table 8.--Proportion of sample wool producers who were able to determine the quality or market value of their wool who had assistance from someone other than the buyer, and who sold or consigned, 1964

Weight class (pounds)	Producers able to determine--		Producers who had assistance	Producers who--	
	Quality of their wool	Market value of their wool		Consigned	Sold
	Percent				
Less than 100	19.4	14.4	12.3	33.0	67.0
100-499	23.9	19.1	11.4	28.5	71.5
500-999	33.8	25.2	14.3	32.5	67.5
1,000-1,999	35.8	29.5	16.8	39.4	60.6
2,000-4,999	39.4	28.4	16.5	42.3	57.7
5,000-9,999	34.1	27.3	22.7	28.0	72.0
10,000 plus	50.0	50.0	28.8	28.0	72.0
Total	33.8	20.8	13.0	--	--

In addition to wool quality information, however, producers must also know current wool prices, including quality-price differentials, before they can determine the market value of their wool. Results show that fewer producers were able to determine the market value of their clips than those who were able to determine its quality. But as in quality determination, as the average size of lot marketed increased, the proportion of producers able to estimate market value generally increased also. About 21 percent of the respondents said they could estimate the market value of their wool. Approximately 79 percent of the producers needed assistance in determining the market value of their wool or dispose of their wool without knowing if it was fairly priced.

Only 13 percent of the producers in this study received assistance (other than from the buyer to whom they were selling) in estimating the market value of their wool. There were differences among producers marketing in various weight classes (table 8). Producers of larger clips were more apt to receive assistance in determining market value than were producers of smaller clips.

The question arises as to whether this type of assistance is more readily available to larger producers, or whether smaller producers fail to take advantage of assistance. There seems to be no available evidence which suggests the first to be true. Generally, more producers consign their wool as their average size of lot marketed increases (table 8) even though consignment warehouses are thought to be available in many areas of small producers. Assuming that consignors usually receive unbiased assistance in marketing their wool, the proportion of consignments answers the question in part by indicating that smaller producers fail to take advantage of assistance. Of course, many producers of smaller clips consign their wool through local pools and many of these pools are "graded" by the buyer.

Prices received by producers were not covered by this study. However, other studies show that under certain conditions, producers who consigned or otherwise took advantage of professional marketing services may have realized gains over selling their wool direct (1). Producers should therefore evaluate the cost-benefit conditions of alternative methods of marketing wool in their area. Improved wool production and preparatory practices, followed by careful selection of available marketing firms and services, can often eliminate or reduce much of the dissatisfaction that arises among wool producers and also result in greater returns from wool.

Local Wool Pools

Local pools usually result from a lack of market outlets and producer dissatisfaction with local marketing conditions, and they are concentrated largely in the Eastern and Southern United States, and in the Northern Regions of the Rocky Mountains (fig. 5). These are the areas with the fewest number of wool warehouses. There are more than 200 local wool pools throughout the United States and information was obtained for this study by interviewing the operators of 47 pools, selected randomly within the designated regions.

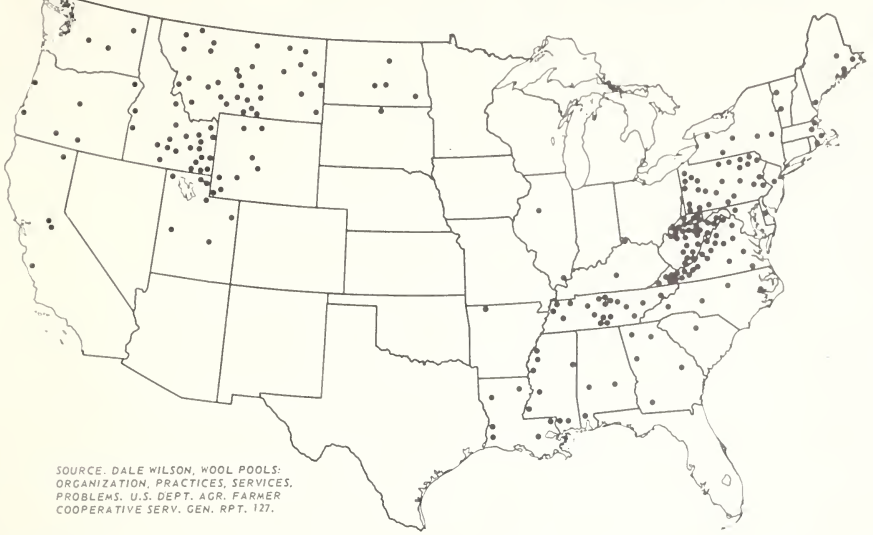
The pool officials interviewed reported that in 1964 about 2-1/8 million pounds of shorn wool was marketed through the 47 sample pools. This was nearly 17 percent (or one-sixth) of shorn wool estimated to have been handled by all pools, and 1 percent of total U.S. shorn wool production. 10/ Members of the sample pools also constituted about 17 percent of total pool membership and approximately 2-2/3 percent of the estimated number of U.S. wool producers.

Volume of Wool Handled and Cost of Operation

Generally, the success of a wool pool's operation depends a great deal upon the volume of wool it can assemble. Larger volumes of wool marketed

10/ Estimates were based on a 15.5 percent decline in total shorn wool production from 1961 to 1964, and a 3.9 percent decline in total number of local wool pools during the same period.

FIGURE 5.--LOCATION OF WOOL POOLS IN UNITED STATES



SOURCE: DALE WILSON, WOOL POOLS: ORGANIZATION, PRACTICES, SERVICES, PROBLEMS. U.S. DEPT. AGR. FARMER COOPERATIVE SERV. GEN. RPT. 127.

usually result in lower marketing costs per pound to each member. 11/ Larger volumes of wool also make feasible a wider range of marketing services which may result in higher net returns to producers. Such cost items as bookkeeping, correspondence, and capitation dues are related to the number of pool members as well as the volume of wool marketed, and for some for the sample pools these items made up a large part of their total operating costs. In most cases, however, costs which varied more directly with the volume of wool handled accounted for the largest proportion of total operating costs.

Also noted were differences in the services or functions performed by individual pools, and differences in the cost of performing similar services or functions (which in part was accounted for by the use of volunteer member labor, i.e., zero cost for some pools' services). Since all pools in a Region did not perform the same services, and thereby provide a common basis for comparing their operating costs, pools were grouped according to similar operations, regardless of Region. The results show that most of the differences

11/ For specific marketing services, wool volume may vary considerably before unit cost changes. For example, rail rates for grease wool normally decrease at 40,000-lb. and 60,000-lb. shipments. For similar origin-destination shipments, a local pool would have approximately the same per unit cost for shipping any volume 20,000 to 40,000 lb., and unit costs would be similar for shipments between 40,000 and 60,000 pounds.

in operating costs of local pools with similar marketing operations could be explained by differences in volume of wool handled (table 9). This means, for example, that among the local pools in Group I, 67.5 percent of their differences in operating costs was "explained" by differences in the volume of wool they handled. The remaining or "unexplained" variation in cost was related to other factors. On the average, as the volume of wool handled by the pools in Group I increased by 1,000 pounds, the average cost of marketing declined about 0.055 cent per pound. Each 10,000-pound increase meant a reduction in average operating cost of just over 1/2 cent per pound. Similar analysis of the other four groups of local pools yielded results similar to those for Group I. Most apparent were differences in level of operating costs, and in the amount of variation in costs explained by the volume of wool handled.

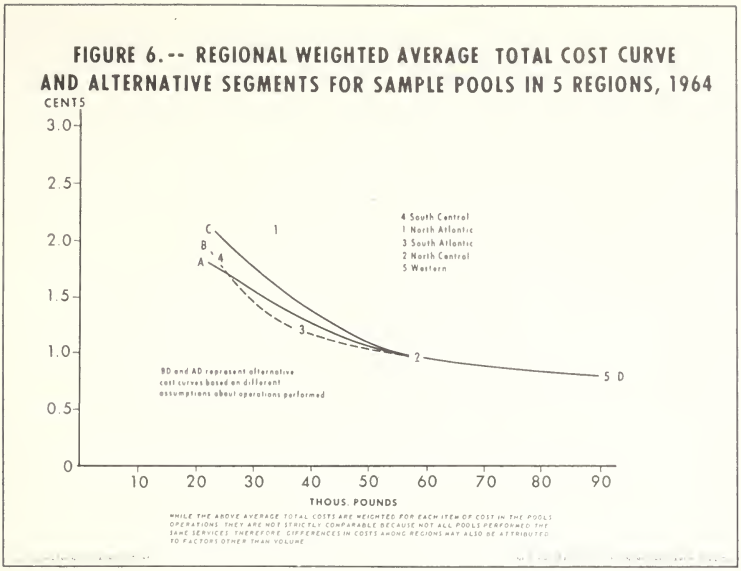
Table 9.--Relationship of operating cost to volume of wool handled by sample local pools with similar marketing operations, 1964

Group 1/	Pools in group	Level of operating costs	Decline in unit operating cost per 1,000 pound increase	R^2 2/
	Number	- - - - - - Cents per pound - - - - - - -		
I	9	1.810	0.055	.675
II	15	2.794	0.046	.853
III	13	3.924	0.045	.880
IV	5	5.931	0.045	.991
V	5	8.432	0.048	.986

1/ Local pools with similar marketing operations were grouped together, regardless of the Region in which they were located.

2/ R^2 represents the proportion of variation in operating costs which can be explained by variations in volume of wool handled.

To provide a regional view of wool pool operations which relates the volume of wool handled, services performed, and cost of operations, a weighted average cost for each Region was plotted (fig. 6). It was assumed that many differences in marketing operations within Regions would be similar and tend to offset any differences between the Regions, thus providing at least a general guideline for volume of wool handled and cost of operations. The results of this analysis are for the most part theoretically consistent. Lower average costs of marketing were associated with larger volumes of wool handled, except for pools in the North Atlantic Region. There are two basic reasons why average cost of local pool marketing operations in this Region was so much higher than for pools with similar volume in other Regions. First, the



typical pool in the North Atlantic Region generally performed more services than did typical pools in other Regions, so operating costs were proportionately higher there for all volumes of wool handled. Second, since the average regional cost was weighted by the volume of wool in each pool in which a service is performed, proportionately more pools in the Region performing additional services added to costs for similar wool volumes. Alternative curves were drawn to illustrate several assumptions with respect to these costs. Curve CD shows an average relationship between cost and volume for all five Regions. If it is assumed that North Atlantic pools as a group perform a larger number of services than the average pool in other Regions, curves BD and AD can be used to visualize possible average cost-volume relationships. Curve BD is based upon precise points on the graph for South Atlantic and South Central pools. However, it may be assumed that average costs more realistically would be somewhere between these two points; in which case curve AD illustrates the appropriate average relationship between cost of marketing and volume of wool handled.

Major deviations from these guidelines may indicate a serious need for adjustments. This is not to say, however, that improvements in wool pool marketing operations are not generally needed now, nor does this analysis indicate the net performance of local wool pools. In some instances, higher marketing costs only reflect a larger number of marketing services being performed which may result in higher net returns to pool members. What the analysis does show is that total unit operating costs trend down as volume handled increases through the entire range of data.

Perhaps just as important for local pool management and planning is an understanding of how much specific items contribute to total cost. As in the previous analysis, an assumption is necessary to account for differences in marketing operations within a Region. To break out cost items and thereby make regional comparisons possible, it was assumed that regional average costs for specified items were based upon the average cost incurred by local pools performing the respective services. For example, only three of the eight local pools in the North Atlantic Region incurred a cost for rent. It was assumed that the average cost of rent for these three pools was a standard cost for the Region as a whole. On the basis of this assumption, table 10 shows how cost

Table 10.--Regional average cost for wool pool operations, by item, 1964

Item	Region				
	North Atlantic	North Central	South Atlantic	South Central	West
	Cents per pound				
Expenses for sale committee, sec. correspondence & communications, bookkeeping, auditing, legal aid	0.643	0.513	0.489	0.566	0.412
Rent, insurance	.281	.158	.176	.215	.153
Grading	.325	.443	.332	.354	1.349
Loading, packing, bags, gen. labor	2.411	.662	1.495	1.231	.955
Transportation	.165	.060	.363	2.917	.912
Assn. dues, organizational marketing assessments	.093	.201	.752	2.228	.126
Miscellaneous	.437	.016	.298	--	.559
Total	4.355	2.053	4.105	7.511	4.466

items varied among the five Regions. The first two cost categories are comprised of items usually considered as being fixed costs. Differences in the level of these costs are proportionately less than differences in the average volume of wool handled by the respective pools in each Region. A partial explanation seems to be that pools in some areas rely a great deal more on volunteer labor for these jobs than do pools in other areas. Also, payments for services of officers, sale committees, secretaries, and bookkeepers varied not according to the volume of wool handled but more or less arbitrarily.

Grading of wool added little to total cost, except in the Western Region. However, only two of the 15 pools surveyed in the West reported grading their wool, and these two pools consisted mainly of clips from farm flocks which varied greatly in quality. Since many Western pools are made up of uniform clips, grading is not generally considered to be advantageous. Also, the type of grading varied from Region to Region. Pools in the South Atlantic and South Central Regions are usually bag-graded, while in the North Atlantic and West, wool is fleece-graded on specifications. Bag-grading is more or less an inspection for contamination and wool faults as a basis for making various price penalties or deductions.

Labor costs in the five Regions ranged between about 0.7 cent and 2.4 cents per pound. Overall labor was the most important single cost item for local pools. Most volunteer labor by members is for the less arduous tasks, while hired labor packs and loads wool.

The inefficient and expensive practice of having buyers return wool bags to the pools is being abandoned in most areas. This practice is still followed by some local pools in the South Atlantic and South Central Regions, and it constitutes a significant cost in those Regions.

Costs for transporting wool to buyer facilities varied among pools depending upon location or arrangements with the buyer. About 25 percent of the pools in each Region incurred a transportation cost. Buyers arranged for shipments of wool from the other 75 percent. It is reasonable to assume, however, that buyers who incur the cost of shipment must make corresponding allowances in the prices they pay to pools.

In each Region, between 25 and 62 percent of the pools levied association dues or marketing charges. Usually the charge was based upon the pounds of wool marketed and it ranged from less than 0.1 cent to more than 2 cents per pound. Use of these funds was not limited to any single category, and in several cases how they were used was not clear. Occasionally, local pools carry over a small surplus fund from one year to the next.

Pool Organization and Marketing Practices

Local pools serve a purpose by providing an organized market. However, pools in some areas comprise only the most basic form or organization. These are the informal, independent associations of producers who meet once or twice a year to market their wool. These pools are often managed by one or two producers who are popular in the community and who are willing to contribute a portion of their time to the pool. Since these men are producers and seldom experienced marketers, they usually are unable to develop necessary marketing policies and outlets with which to guide the pool's operation and ensure members the maximum value obtainable for their wool. Objectionable marketing practices which penalize pool members tend to develop from these conditions.

An improvement to this loose-knit form of organization is incorporation of the local pool. This does not guarantee successful operations but it

provides stability and a legal corporate structure to the organization, and, consequently, it encourages potential buyers to participate in bidding. About 30 percent of the local pools surveyed in this study were unincorporated. Most of these pools were concentrated in the South Atlantic and Western Regions and generally handled smaller volumes of wool.

There are broader forms of organization among pools in several areas which seem to have additional advantages. In several States, local pools have attempted to overcome common problems by coordinating their marketing activities with other pools. In some instances, these joint operations resulted in the organizing of pool associations. In Pennsylvania and Tennessee, most of the local pools coordinate sale and assembly dates. State extension specialists take advantage of the assembly dates to demonstrate wool grading to pool members. These demonstrations also provide product identification for the pools which enables them to market their wool more effectively. Many of the West Virginia pool sale and assembly dates are coordinated by State Farm Bureau personnel. In Virginia, North Carolina, Georgia, and Montana, statewide associations assisted local pools in preparing and marketing their wool. Such operations are examples of cooperative marketing on a broader basis in an attempt to increase producer bargaining power. Other marketing improvements realized from pool associations have been standardization of sale contracts, more complete and reliable market information, feasibility of increasing marketing services such as grading and core testing, and broader representation of purchasing firms at pool sales.

Most local pools lack adequate storage facilities and must either assemble wool and sell it on the same day or solicit bids before the wool is assembled or even before it is shorn. Soliciting bids before assembling the wool strengthens the pool's bargaining position in one respect: It provides the pool more freedom to turn down all bids if they are not satisfactory and eliminates the possibility of incurring storage expenses. But there are also very serious disadvantages to such a practice. Some potential buyers refuse to bid without an opportunity to first inspect the wool, and those who do submit bids must make allowances for the risk they are asked to take in bidding on wool which they have not seen.

There is another practice that can have a limiting effect on buyers' response to pool bid solicitations, and possibly restrict competitive pricing. In some areas, pools hold their sales on the same date. Since buyers often do not wish to purchase all of the pooled wool offered in an area, they concentrate their bidding on a few particular pools. As a result, pools which have the reputation of offering a less attractive product or which pursue unsound marketing policies, may find they receive few bids. Buyers too are at a disadvantage when all the pools in a wide area hold sales on the same date. Buyers who fail to submit winning bids have a more limited opportunity to bid on the other pools. By coordinating sales dates and spacing them properly (neither having sales on the same day nor scheduling them many days apart), individual pools are able to increase the number of firms bidding on their wool.

Since nearly all local pools lack permanent storage facilities, wool is usually assembled only once or twice a year. Use of assembly facilities are

kept to a minimum and usually consist of the local fairgrounds, railroad loading platforms, or rented warehouse space. Most of the pools surveyed took no longer than 1 or 2 days to assemble their wool. Some pools took as long as a week to assemble, and a few pools in the West that owned storage facilities took up to 75 days. Differences among pools in the number and spacing of assembly days were usually related to the availability of storage facilities, the needs of members, and each pool's historical pattern of assembly dates. Some members sheared early in the year while others sheared much later. In other instances, differences of opinion among members as to the best time to market wool resulted in more than one pooling date. Directors of the more successfully operated pools considered the use of alternative assembly dates as an additional incentive to buyers. Assembly dates which are more suitable to the buyers' convenience might require substituting on-farm storage by producers for commercial storage by the buyer. But, directors reasoned that the savings in cost of storage for the buyer might be reflected in higher prices paid to the pool.

The ultimate success of a pool's operation is measured in terms of its ability to market wool to each grower's advantage. However, it is not uncommon for pools to penalize members with higher quality wool by selling all wool for an average price, regardless of grade or quality differences. Bids are evaluated on the basis of total returns to the pool and not necessarily on the basis of relative market prices for wools of different quality. This practice is common among local pools, particularly in the South Atlantic and South Central Regions, and tends to distort market grade differentials. It also has the longrun tendency of encouraging producers to increase their volume of wool instead of (and often at the expense of) their wool quality.

Market Outlets

Directors of the 47 local pools surveyed reported that about 5,700 producers marketed nearly 2-1/8 million pounds of wool through these pools in 1964 (table 11). Of this amount, processors purchased slightly more than 52 percent, and the remainder was purchased by dealers. However, comparing purchases within each Region for these two groups show entirely different marketing patterns. Processors were important buyers, particularly in the North and South Atlantic Regions and they purchased more than half of the pooled wool in the South Central Region. In the North Central and Western Regions where dealers were most active, more than half of the wool marketed through local pools was purchased by regional dealers. Overall, regional dealers purchased about the same volume of wool as did topmakers.

In terms of volume of raw wool purchased, the most important type of processor in four of the five Regions was the topmaker. Some mills produce a limited range of wool products and consequently have limited requirements for various types and qualities of grease wool. Specialty firms such as papermaker felt manufacturers are even more restrictive in their wool requirements.

Table 11.--Volume, proportion bought, and distribution of purchases of wool marketed through sample local pools, by Region and type of buyer, 1964

Type of buyer 1/	Region					
	North Atlantic	North Central	South Atlantic	South Central	Western	Total
	Pounds					
Volume sold to:						
Dealer:						
Local	--	--	--	41,713	6,886	48,599
Regional	--	196,011	--	38,758	470,875	705,644
National	79,000	80,000	--	--	100,000	259,000
Subtotal	79,000	276,011	--	80,471	577,761	1,013,243
Processor:						
Topmaker	186,596	84.000	245,728	58,799	159,317	734,440
Manufacturer	4,800	--	160,467	46,988	166,005	378,260
Subtotal	191,396	84,000	406,195	105,787	325,322	1,112,700
Total	270,396	360,011	406,195	186,258	903,083	2,125,943
	Percent					
Proportion bought by:						
Dealer:						
Local	--	--	--	22.4	0.8	2.3
Regional	--	54.5	--	20.8	52.1	33.2
National	29.2	22.2	--	--	11.1	12.2
Subtotal	29.2	76.7	--	43.2	64.0	47.7
Processor:						
Topmaker	69.0	23.3	60.5	31.6	17.6	34.5
Manufacturer	1.8	--	39.5	25.2	18.4	17.8
Subtotal	70.8	23.3	100.0	56.8	36.0	52.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of purchases by:						
Dealer:						
Local	--	--	--	85.8	14.2	100.0
Regional	--	27.8	--	5.5	66.7	100.0
National	30.5	30.9	--	--	38.6	100.0
Subtotal	7.8	27.3	--	7.9	57.0	100.0
Processor:						
Topmaker	25.4	11.4	33.5	8.0	21.7	100.0
Manufacturer	1.3	--	42.4	12.4	43.9	100.0
Subtotal	17.2	7.6	36.5	9.5	29.2	100.0
Total	12.7	16.9	19.1	8.8	42.5	100.0

1/ Classification of buyers is based on information given by pool directors or managers.

Topmakers on the other hand generally produce a variety of tops 12/ for resale and consequently may have use for the variety of wools often found in local pools of the farm flock areas.

Data from pool directors show that buyers often purchase pooled wool (which usually is not shorn at time of sale) on the basis of information from past sales. There is also a tendency in many areas for local pools to have repeat buyers each year. The result for many pools is a growing dependency on a limited number of a particular type of buyer. This can produce a great deal of leverage for the buyers, and can depress wool pool prices. For example, processors reportedly purchased all of the pooled wool in the South Atlantic Region. However, these wools represented less than 37 percent of the processors' total purchases in 1965 (table 11). In such a restricted market, reduced competitive bidding will probably occur when there are only a few buyers active than in areas where local pools have good reputations for wool quality and marketing practices. Some local pools have such poor reputations for quality and practice that they can be considered in a negative way as "specialty" pools, and only a very few buyers are willing to submit bids. In general, when outlook for consumer demand and raw wool prices are uncertain or unfavorable, buyers hesitate to build their inventories. They will often do so only when supplies can be obtained at "bargain" price or when market conditions become clearer. Information obtained from local pool directors show that sealed bid sales held during periods of slack demand often result in "bargain bids." The number of bids submitted were greatly reduced, and occasionally no bids at all were received. Under these conditions, local pools either schedule sales on a later date and hope for an improved market, or accept a current bid. Directors indicated that such decisions were often made without sufficient market information.

Marketing Problems

Directors of the local pools interviewed were asked to rank what they thought to be their most important marketing problems. First on their list was the need for improved market information and assistance in bid evaluation; 20 directors ranked this as their first or second most important need (table 12). Closely related was the problem of evaluating wool quality which 14 directors ranked as one of their top two problems. The inability of many pool members to reasonably identify and evaluate their wool quality is one reason why pool committees accept bids which they hope will give the highest average return to a majority of members, instead of bids that reflect market quality price differentials. It is through this process that pools often blunt the incentive to improve the quality of wool produced.

As the number of wool buyers who consistently purchase pooled wool decreases, the problem of soliciting competitive bidding generally increases. The problem can become acute for local pools which fail to properly prepare and

12/ After raw wool is cleaned (scoured), it is carded and then combed into a basic form called top. Top is a continuous sliver of parallel fibers which is then spun into yarn. The quality of wool which goes into producing the top is determined by the finished product to be made from the top.

Table 12.--Number of sample pools that indicated problem areas, in order of importance, 1964

Problem areas	Order of importance					Total
	First	Second	Third	Fourth	Fifth	
	Number					
Market information and bid evaluation	13	7	1	--	--	21
Wool quality evaluation	3	11	5	--	--	19
Bid solicitation	6	--	8	2	1	17
Grading	4	2	4	2	--	12
Financing	2	--	--	3	--	5
Storage	3	--	--	1	--	4
Incentives for quality wool	2	--	--	--	--	2
Volume	2	--	--	--	--	2
Core testing	1	1	3	1	--	6
Recordkeeping	--	1	--	1	--	2
Disbursement of proceeds	--	--	1	1	--	2
Need for more graders	1	--	--	--	--	1
Packing wool	1	--	--	--	--	1
Transportation	--	1	--	--	--	1

merchandise their wool. 13/ Seventeen pool directors indicated having a problem of soliciting bids, and for six of them, it was their most important problem.

If the study year had not been a relatively good market year, many more directors may have indicated lack of storage as a major problem. Sheep in most areas are shorn only during the spring (Texas is the major exception), and prices may dip because of the sudden volume of wool thrown onto the market or because of a slack in demand. Adequate storage facilities mean greater bargaining power for local pool members. It also adds time to the market strategy of pools, which is based upon expectations of wool prices. Few pools, however, had seriously considered the advantages of storing wool.

Depending upon location, there are several alternative means of storage open to pools. In some areas, general warehousing facilities, fairgrounds, or wool warehouses could be utilized. In some cases, the only form of intermediate or long-term storage available to the local pool members is on-farm storage. An alternative is to construct new storage facilities, provided that there is a sufficient volume of wool to warrant it.

13/ Several processors interviewed in this study indicated particular dissatisfaction with the wool preparation and merchandising practices of most local pools.

Generally lacking among pool directors interviewed was an awareness that insufficient wool volume is a basic problem of many local pools. Larger volumes of wool make additional marketing services feasible, such as core testing, grading, and storage. Core testing is the most consistent means of measuring the clean content of grease wool, regardless of grade, and it provides a firm basis for evaluating grease bids. Since most producers are unable to accurately identify the market quality of their clip, it is advantageous for them to collectively pool a volume of wool which warrants performing these quality evaluations. Few local pools, however, use scientific means of evaluation, either because of insufficient wool volume or as a matter of policy. To realize their potential, local pools must know what the product is they are trying to market. Handling larger volumes of wool can make obtaining this information feasible.

Packing and transportation of wool, recordkeeping, and disbursement of proceeds seem to present few problems to most pools. The general practice of utilizing volunteer labor for these functions is what keeps the cost of operations so low for many pools. Availability of volunteer labor is, in fact, a basic advantage of local pools.

Results of this study show that in many respects directors of local wool pools are aware of their marketing problems--especially in the areas of market information, bid evaluation, and wool quality evaluation; areas where many pools find themselves lacking season after season. However, failure to recognize the need for a sufficient quantity of wool to operate efficiently indicates that many pools will find it difficult to solve other problems which are related to volume.

Wool Warehouses

In terms of volume of wool handled, warehouses are the most important single type of marketing agency within the domestic wool marketing system. Each year the bulk of the U.S. wool clip passes through these warehouses either on consignment or warehouse account, or for special handling. It is estimated that perhaps 125 warehouses in the United States handled wool each year, but that only 25 to 30 of them may account for as much as 70 percent of the wool marketed through all warehouses. Besides these differences in size, warehouses also vary in their sources of revenue, sources of wool, proportions of wool handled on warehouse account and consignment, procurement organization, and cost of marketing operations. Much of this variation can be attributed to changes in several underlying market conditions.

The sharp decline over the past 20 years in domestic production of grease wool has had its affect on the location, number, and size of wool warehouses in operation. Twelve years ago there were at least five warehouses in the Atlantic Regions handling 200,000 pounds of wool or more. Today, no wool warehouses are known to be operating in these Regions, and only about four that handle a million pounds or more of wool each year operate east of the Mississippi River. By and large, this reflects the low concentration and small average size of sheep enterprises over the areas. About 10 percent of total U.S. shorn wool production occurs in the Eastern Regions.

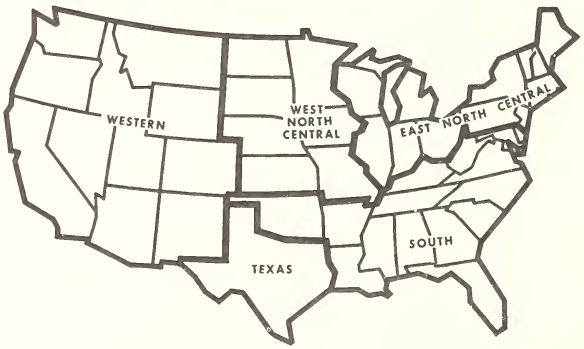
However, the type and number of firms competing for the producer's wool may also affect the size of marketing operations. Texas wool and mohair production is highly concentrated in a relatively small area, and the average lot marketed is large. But there are so many warehouses competing for this production that few, if any of them, handle as much as 3 million pounds of wool and mohair in a year. Many of these warehouses handle less than half a million pounds of wool and mohair.

Competition for wool can extend over large areas too. Several warehouses in the North Central Regions solicit wool through a network of local dealers who purchase on commission. Through these local representatives, the warehouses are able to assemble wool produced in several States.

In general, the location of warehouses is determined primarily by wool production patterns. Size of warehouse operations is also influenced by wool production patterns of the area, and by the number of competing marketing firms too. The mix of warehouses in an area may vary (i.e., cooperative, commission, or dealer), depending upon producer sentiments, local competitive forces, and efficiency of agency operations.

To determine more about the organization and operation of wool warehouses and the factors which influence them, all warehouses thought to be operating in 1964 were stratified on the basis of size and location. From this list, 38 were randomly selected for interviews. Warehouse Regions were similar to those for producers with three exceptions: The North Atlantic and East North Central Regions were combined, the South Central and South Atlantic Regions were also combined and Texas was made separate from the South Central Region (Fig. 7).

FIGURE 7.--FIVE MAJOR AREA LOCATIONS OF WOOL WAREHOUSES IN THE UNITED STATES, 1965



Size and Type of Operation

Warehouse operators interviewed reported handling nearly 59 million pounds of grease wool in 1964--almost a fourth of the domestic clip that year. Only one operator reported handling more than 5 million pounds of wool, and half of them handled less than a million pounds (table 13). About 29 percent of all

Table 13.--Number of sample warehouses, by size of operation and Region, 1964

Volume of operation (million pounds)	Region					Total
	East North Central	West North Central	South	Texas	Western	
	Number					
0.49 and less	2	1	2	4	2	11
0.5 - .99	--	1	1	4	2	8
1.0 - 1.49	--	1	--	4	2	7
1.5 - 1.99	--	--	--	2	--	2
2.0 - 2.99	1	--	--	2	2	5
3.0 - 4.99	--	--	1	--	3	4
5.0 - plus	--	1	--	--	--	1
Total	3	4	4	16	11	38

warehouses interviewed handled less than 500,000 pounds of wool--the smallest handled 80,000 pounds. Most smaller warehouses had other sources of income than wool, and so did some of the medium- and large-size warehouses. One operator did not furnish this type of information, but 19 of the remaining 37 reported that wool was not their major source of income (table 14).

Almost all warehouses handling mohair were located in Texas, where more than 95 percent of the domestic clip is produced. Operators of five of these warehouses reported that handling mohair provides their major source of revenue.

Warehouses with revenue from sources other than wool or mohair reported a variety of activities ranging from renting warehouse space for storing pleasure boats to handling cascara tree bark, cattle hides, and farm supplies. In one instance, "other" revenue amounted to 94 percent of total receipts, even though the warehouse handled more than 300,000 pounds of wool and mohair.

Table 14.--Number of sample warehouses, by source of gross receipts and Region, 1964

Percentage of total receipts by source	Region					Total
	East North Central	West North Central	South	Texas	Western	
	Number					
Wool:						
20 and less	1	--	2	2	2	7
21-49	1	3	1	6	1	12
50-74	--	--	--	7	--	7
75-100	1	1	--	1	8	11
Mohair:						
25 and less	--	--	1	4	1	6
26-49	--	--	--	7	--	7
50-100	--	--	--	5	--	5
Other: 1/						
20 and less	1	--	--	8	2	11
21-49	--	--	--	1	--	1
50-74	1	3	1	--	--	5
75-100	1	--	2	2	3	8

1/ Renting warehouse space and handling farm supplies and other goods and services.

Analysis shows that while warehouses of all sizes had sources of revenue other than from wool and mohair, there were two distinct groups. Cooperative warehouses usually handled a million pounds or more of wool, and also provided general farm supplies and services to producers, such as fertilizers and chemicals. Although these other sources of revenue may be proportionately large, they were usually not essential to the efficiency of wool operations, and were only connected indirectly. Revenues from the wool operations of smaller warehouses which were privately owned were usually supplemented with revenues from other types of enterprises. In many instances, wool comprised the supplementing operation. Like the small producers described in a previous section of this report, preparatory and marketing operations of these smaller warehouses were generally rudimentary. However, since most wool marketed through warehouses each year is handled only by a few, it is at these larger warehouses that improvements can be made which will have the most significant impact on marketing efficiency.

All but seven sample warehouses handled some portion of their wool volume on warehouse account (table 15). Nearly twice that number did not consign any

Table 15.--Number of sample warehouses, by method of handling wool and Region, 1964

Method of handling wool (percent)	Region					Total
	East North Central	West North Central	South	Texas	Western	
	Number					
Warehouse account:						
20 and less	--	--	--	3	1	4
21-49	1	--	--	2	1	4
50-74	--	--	--	4	3	7
75-100	2	4	3	4	3	16
Consignment:						
20 and less	--	--	--	3	2	5
21-49	--	--	--	3	2	5
50-74	1	--	--	1	1	3
75-100	--	--	1	8	3	12
Storage only:						
49 and less	1	--	--	--	1	2
50-100	--	--	--	--	1	1

of the wool they handled. Most operators of warehouses that consigned wool said that they preferred consignments for two major reasons: (1) the reduced amount of cash required by the warehouse to do business, and (2) the producer maintains the risk of market fluctuations. Only 15 warehouses reported handling 50 percent or more of their total volume on consignment, while 23 reported they purchased at least half the wool they handled. One warehouse reported handling most of its wool for storage only. Overall, warehouses in the West North Central and Southern Regions purchased about 96 and 93 percent of the total wool volume they handled (table 16). Warehouses in the other three areas consigned between 60 and 67 percent of their wool volume. However, of the 59 million pounds of wool handled by all warehouses interviewed, about 53 percent was purchased and 47 percent consigned.

Sources of Wool

Most of the wool (92 percent) handled by warehouses was secured directly from producers. All consigned wool in each Region came directly from producers, except for about 2 percent in the West which was consigned by local pools, and less than 1 1/2 percent consigned to Texas warehouses by other warehouses (table 17). The excess warehouse capacity that exists in Texas is shown in that about 26 percent of the wool handled in Texas on warehouse account was

Table 16.--Proportion of wool purchased and consigned by sample warehouses, by Region, 1964

Method of handling	Region					Total
	East North Central	West North Central	South	Texas	Western	
	Percent					
Warehouse account	39.7	95.8	92.8	34.6	32.6	53.3
Consignment	60.3	4.2	7.2	66.4	67.4	46.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

purchased from other warehouses. Some wool processors maintain affiliation with warehouses in Texas, and part of the interwarehouse transfers of wool reflect these operations. 14/ Warehouses may occasionally have a demand for wool which they cannot satisfy from their own inventories. To fill these orders, they purchase wool from other warehouses. In each of the three other Regions, local pools provided between 5 and 7 percent of the wool volume handled on warehouse account.

Wool Procurement Operations

Depending upon market conditions and other factors, warehouses purchase wool at basically four stages of marketing. Wool may be purchased prior to shearing (often referred to as contracting), at "the farm gate," at the warehouse door, or at the warehouse after consignment. Wool contracting occurred in three Regions, but at significant levels in only two (table 18). The proportion of wool contracted each year depends primarily upon processors' expectations of market conditions and their desire for a specified supply of wool with known qualities. The most common procedure in contracting is for a warehouse operator to advance funds for a specified number of fleeces. The amount of advance may be from 25 to 75 percent of the expected market value of fleeces at shearing time.

Of the three basic methods of procuring wool (i.e., contracting, warehouse account, and consignment), most warehouses least prefer contracting because of price fluctuation risk. For most warehouses, contracting is the last method of procurement used in response to competitive forces in the market.

14/ A private warehouse is one that is owned by a processor, and does not handle raw wool for marketing but only purchases it for use in processing.

Table 17.--Source of wool consigned and purchased by sample warehouses, by Region, 1964

Source	Region										Total	
	East North Central		West North Central		South		Texas		Western			
	Con.	Pur.	Con.	Pur.	Con.	Pur.	Con.	Pur.	Con.	Pur.	Con.	Pur.
	Percent											
Individual producers	100.0	100.0	100.0	86.2	100.0	93.0	98.7	73.9	97.9	93.0	98.4	86.5
Local pools	--	--	--	5.0	--	6.7	--	--	2.1	7.0	1.0	4.5
Other warehouses	--	--	--	0.9	--	--	0.4	26.1	--	--	0.2	5.5
Other	--	--	--	7.9	--	0.3	0.9	--	--	--	0.4	3.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 18.--Wool purchased by sample warehouses at different stages of marketing, within Regions, 1964

Time of purchase	Region					Total
	East North Central	West North Central	South	Texas	Western	
	Percent					
Prior to shearing..	--	4.2	--	18.3	26.4	10.3
After shearing but before delivery to warehouse.....	68.2	89.6	96.4	--	40.5	64.9
At warehouse.....	31.8	6.2	3.6	68.9	33.1	22.7
After consignment..	--	--	--	12.8	--	2.1
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

Type and Number of Buyers Soliciting Wool

The volume of wool purchased at the farm and ranch after being shorn depends primarily on the number of buyers in the field. In competing for the shrinking domestic wool production, most warehouses feel they cannot wait for the producer to bring his wool to the warehouse, so warehouses in most areas have local representatives soliciting wool. In the 11 Western States and Texas, warehouses had an average of only 3 or 4 commission buyers in the field (table 19). But in the East and West North Central Regions and in the South. warehouses had an average of between 44 and 89 local agents soliciting wool. On the average, local agents in these three Regions purchased between 73 and nearly 92 percent of the wool volume handled on warehouse accounts (table 20). Although fewer in average number, warehouse agents in the Western Region purchased slightly more than half of the wool handled on warehouse account in that Region. In Texas, a completely different pattern is evident. Approximately 64 percent of the purchased wool, and all of the consignment wool was obtained at the warehouse. Warehouse agents purchased only about 14 percent of the volume handled in Texas.

Salaried buyers were an important factor in warehouse procurement operations of three Regions. They purchased about a fifth of the wool volume in Texas and the East North Central Region, and two-fifths of the wool handled on warehouse account in the West. They also solicited nearly 29 percent of the consignment business in the Western Region, and all of the wool reported consigned in the South--only 300,000 pounds handled by a single warehouse. Salaried buyers are often located at the warehouse where they perform other functions such as wool grading, core testing, supervising labor, and other related duties. Assigning the buyers with responsibilities other than wool

Table 19.--Average number of wool buyers employed by sample warehouses in each Region, 1964

Type of buyer	Region				
	East North Central	West North Central	South	Texas	Western
	Number				
Salary only	1	1	2	1	2
Commission only	44	89	52	3	4
Other 1/	1	1	--	1	2

1/ Includes warehouse owners and managers at the warehouses.

Table 20.--Percentage of sample regional wool warehouse volume solicited by each type of buyer, 1964

Type of buyer	Region									
	East North Central		West North Central		South		Texas		Western	
	Con.	Pur.	Con.	Pur.	Con.	Pur.	Con.	Pur.	Con.	Pur.
	Percent									
Salary only	--	19.4	--	7.2	100.0	8.3	--	22.2	28.7	40.3
Commission only	60.0	73.0	100.0	91.6	--	91.7	--	13.6	22.2	51.4
Other 1/	40.0	7.6	--	1.2	--	--	100.0	64.2	49.1	8.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Includes warehouse owners and managers at the warehouses.

procurement enables warehouses to reduce their unit operating costs. Instead of being a fixed cost item for procurement operations, buyers' salaries vary with the volume of wool they purchase. However, a few warehouses have resident salaried buyers whose sole function is to procure wool. The efficiency of these procurement operations depend largely upon the volume of wool solicited and may vary substantially each year.

Method of Payment

To pay for wool they purchased, warehouse field representatives had two basic means available to them. Of the two, the most common in all Regions was to make payment with a draft on the account of the warehouse they represented. Among the 38 warehouse operators interviewed there was only one exception to this method of payment. In the South, one warehouse required field agents to make payment from their personal accounts and they were reimbursed by the warehouse when the wool was delivered. But generally, warehouses financed the wool from the grower to the buyer.

Price Determination

Warehouses have an almost daily task of determining prices to pay producers for wool of varying quality. Numerous sources of reliable market information are available to warehouse operators, but it is the timeliness of this information that most determines its usefulness. Warehouses with field representatives have the additional problem of keeping their local buyers informed of market prices, once they have been determined. Prices in the field may be quoted as averages, upper limits, or on the basis of quality differentials, grease price or clean price. The accuracy of sources used by warehouse operators to determine their market prices for wool, and the basis on which these prices are quoted in the field can significantly affect income to producers and warehouses.

Of the 36 warehouse operators responding, 52 percent of them said that buyer-customers 15/ were their most important source of information for determining prices to pay producers (table 21). Another 25 percent indicated a home office as their most important source of prices. Wool futures quotations and trade publications ranked as the two second most reliable sources of price information. Local newspapers and the Boston Weekly Review, a Government report, were of least importance to warehouses in their effort to determine market prices for wool.

Once price limits were established at the warehouses, representatives were supplied with market information in various forms from which they determined prices to pay producers. In most cases, local buyers were given updated price lists which only indicated average market prices for grease wool. Twenty-one sample warehouses had no local agents soliciting wool; of the 17

15/ Most customers of warehouses are wool processors.

Table 21.--Number and percentage of sample warehouses indicating relative importance of wool price sources, 1964

Source	Rank						Total	
	First		Second		Third			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Local newspaper...	2	6	1	3	--	--	3	4
Trade publications	--	--	8	25	7	54	15	18
Boston Weekly Review.....	2	6	2	6	3	23	7	9
Futures quotation.	4	11	16	50	1	8	21	26
Prices supplies by buyers 1/....	19	52	4	13	2	15	25	31
Other.....	9	25	1	3	--	--	10	12
Total.....	36	100	32	100	13	100	81	100

1/ These are buyers who purchase from warehouses; usually a processor.

warehouses which did, only five provided their local buyers with information for evaluating the clean price of wool (table 22). 16/

As described in an earlier section of this report, 79 percent of the producers surveyed could not accurately determine the market value of their wool. To do so would require an ability to differentiate and evaluate wool grades, staple lengths, and shrinkage. Consequently, most producers compare the grease price they receive with those received by other producers in the area, and without considering major differences in wool quality or shrinkage factors. To meet this situation, some warehouses, particularly in the North Central

16/ The weight of a fleece of raw wool contains, in addition to wool fiber, such things as lanolin, sand or soil, grass, dung, and other impurities. Consequently, when cleaned a raw fleece will shrink in weight depending upon the amount of impurities. The clean wool remaining is called yield. The relationship between the clean price for wool and the grease price can be expressed as: $P_c = \frac{P_g}{Y}$ where, P_c = clean price of wool, P_g = grease price of wool, and Y = yield (amount of clean wool remaining after removal of all non-wool items from the raw fleece). If a grease price of 60 cents per pound were offered, and the actual clean fiber content was 50 percent of the raw fleece weight, then the equivalent clean price would be $1.20 per pound ($.60/.50 = $1.20).

Table 22.--Number of sample warehouses, classified by means provided local buyers to determine producer prices, 1964

Means of price determination	Region				
	East North Central	West North Central	South	Texas	Western
	-Number-				
Price list indicating:					
Market level	3	3	3	2	5
Grade difference	2	3	2	2	3
Basis for evaluating wool:					
Clean price	--	--	--	1	4
Other	3	3	3	2	1
No field representative	--	1	1	13	6

Regions, attempt to purchase wool at average grease prices. These average prices usually reflect the current market level, and are offered by warehouse buyers for broad classes of wool. Buying wool at an average price also reduces the level of skill required of local buyers to evaluate different lots of wool. However, most warehouses that provided their local buyers with price lists containing market level prices also included prices based upon grade differences. This suggests that these buyers could deviate from the average price when bargaining for superior wools. Some warehouses in these areas consign wool on a "grade and yield" basis, i.e., the individual producer is paid a price based upon fiber fineness, staple length, and clean wool content.

One of the three warehouses in Texas having local buyers, and four of five similar warehouses in the Western Region provided their buyers in the field with sufficient price information to evaluate wool on a clean price basis. This practice may reflect results from the producers' survey which shows that as producers market larger clips, (1) proportionately more of them are able to determine the major quality characteristics of their clips and also the market value, and (2) proportionately more of them receive assistance in determining these two items. The practices of core testing to determine clean wool content and the use of third-party evaluations of grade and staple length appear to be on the upswing in several areas of the Western and Central Regions. Not only are consignment warehouses more frequently using improved testing methods to assist their customers, but more producers with sufficiently large clips are also improving their product knowledge. However, most producers still are without an adequate knowledge of the quality of their wool, and consequently of its market value. Where they exist, nearby wool warehouses are a logical source of this information.

Grading Operations

Quality factors often vary to a considerable extent in much of the wool produced domestically. Consequently, there is a need for grading some of these wools before they can be marketed effectively. Fiber fineness and staple length variation are two major considerations in determining whether a given lot of wool should be graded. Other important factors which must also be considered are cost of grading and the needs of those to whom the wool will be sold.

Grading facilities of surveyed warehouses reflect the general production conditions which exist in each Region (table 23). Nationally, warehouses

Table 23.--Number of sample warehouses, by type of grading facilities and Region, 1964

Classification	Region					Total
	East North Central	West North Central	South	Texas	Western	
	-Number-					
Grading facilities:						
Conveyors	--	1	--	--	--	1
Tables and basket	3	3	4	3	5	18
No grading facilities	--	--	--	13	6	19
Total	3	4	4	16	11	38

averaged grading on the basis of four major classes of fiber fineness (table 24), but there was some disagreement about which wools should be graded. There was a consensus to grade lots containing 20 percent or more of medium wools, but warehouse operators were evenly divided about grading lots of predominately Fine and 1/2-Blood wool (table 25). The average number of classes for fiber fineness ranged between three in Texas, and five in the two most westerly Regions. In terms of staple length, most warehouses classed wool as being Good French Combing and longer, or Average French Combing and shorter. 17/ Only Western Region warehouses averaged a larger number of staple length lines.

17/ For any given grade of staple length there is an inverse relationship between fiber fineness and fiber length, i.e., the finer the fiber, the shorter it can be and still fall in the same grade of staple length.

Table 24.--Average number of classifications for fiber length and fineness, and number of sample warehouses having off-sort classifications, by Region, 1964

Classification	Region				
	East North Central	West North Central	South	Texas	Western
	Number				
Fiber diameter 1/	4	5	4	3	5
Staple length 1/	2	2	2	2	3
Rejects 2/	1	2	4	--	2
Lambs 2/	--	1	2	--	--
Black fiber 2/	2	--	2	--	5

1/ Average number of classifications for warehouses reporting grading operations.

2/ Number of warehouses that grade for off-sorts.

Table 25.--Answers by warehousemen when asked questions about grading by Region, 1964

Should you grade--	Region					Total
	East North Central	West North Central	South	Texas	Western	
	Number					
Predominately Fine and ½ Blood?						
Yes	2	3	1	2	2	10
No	1	1	3	3	3	11
Lots with 20% medium?						
Yes	2	4	3	1/ 4	3	16
No	1	--	1	--	2	4
Lots with 40% medium?						
Yes	2	4	4	5	3	18
No	1	--	--	--	2	3

1/ One operator had no opinion at the time about grading lots with 20-percent medium wools

Several processors complained about warehouse grading and data show that less than half the warehouses had removed off-sorts (table 24). In Texas and most of the West, off-sorts are usually bagged separately at the ranch and grading them is unnecessary. In the fleece area, off-sorts are often placed inside the fleece before tying. This complaint is discussed more fully in the processor section of this report.

A few warehouse operators reported difficulty in marketing wool lots from which fleece with the longest staples had been "removed." Processors require wool of varying lengths in manufacturing their many products and may heavily discount wools which are too short for use in higher quality (and higher priced) products.

Cost of Marketing Services

Grading is but one of several marketing services that warehouses may provide wool producers. The average cost of four basic services performed by warehouses surveyed in this study varied considerably (table 26). Differences

Table 26.--Regional weighted average cost per pound for selected services performed by sample warehouses, 1964

Service	Region					Total weighted average
	East North Central	West North Central	South	Texas	Western	
	Cents per pound 1/					
Grading:						
Shearing pen	--	--	-- 2/	0.40	--	--
Warehouse	1.11	1.52	1.49	0.95	1.63	1.47
Core testing	0.20	0.19	0.25	0.37	0.31	0.33
Baling	0.30	0.45	3/ 0.33	0.33	0.30	0.33
Transport to warehouse	1.13	1.96	3/ 1.71	0.40	1.81	1.71
Regional total	2.74	4.12	3.78 4/	2.05	4.05	3.84

1/ Includes estimated cost of labor and depreciation. For consigned wool, charge per pound was used in lieu of cost per pound.
2/ Includes estimated cost of labor, travel expenses, and depreciation.
3/ These services were not performed by warehouse operators surveyed in the Region so the average cost over all Regions was assumed for purpose of conparison.
4/ Does not include average cost of grading at shearing pen.

in cost of labor, age of equipment, distances from producers to warehouses, and volume of wool handled were among the major factors which contributed to these variations in costs to producers.

All these costs provide some quantitative measure of regional differences in average warehouse marketing operations. Other costs have been omitted from the analysis because of major accounting problems, and because the main objective here was to compare selected marketing services which warehouses provide. Much of the differences in costs reflect adjustments made by warehouse managers to the basic production and marketing conditions of their areas. Because these conditions change over time, and because new and improved operational methods are needed to increase marketing efficiency and competitiveness, warehouse managers are constantly seeking ways to make further adjustments in their operations. Suggested steps toward such adjustments are given at the end of this section.

Warehouse Marketing Channels

Soliciting and preparing wool for market is only half the job of marketing. Warehouse operators' objective is to sell wool at the best price, whether on consignment or warehouse account. In 1964 topmakers took 54.1 percent; manufacturers, 34.9 percent; national dealers, 10.2 percent; and regional dealers, 0.8 percent of the 51,802,000 pounds of wool sold by warehouses surveyed. Marketing patterns in four of the five Regions show that topmakers purchased between 55 and 67 percent of the wool sold from warehouses, and in Texas about 37 percent of the wool marketed through warehouses went to topmakers (table 27).

Table 27.--Percentage of wool sold by sample warehouses, by type of buyer, within Regions, 1964 1/

Buyer	Region				
	East North Central	West North Central	South	Texas	Western
	Percent				
Regional dealers...	--	1.8	--	1.0	--
National dealers...	4.3	4.4	--	25.3	3.8
Topmakers.....	55.5	67.2	60.5	37.4	58.5
Manufacturers.....	40.3	26.6	39.5	36.3	37.7
Total.....	100.0	100.0	100.0	100.0	100.0

1/ Classification of buyers is based on information given by warehouse operators and managers.

Manufacturers purchased about two-fifths of the wool from warehouses in each of four Regions, and about one-fourth of the wool in the West North Central Region. Except in Texas where they acquired about 26 percent of the wool sold from warehouses, dealers were relatively unimportant buyers and accounted for little more than 6 percent of wool purchased in each Region from warehouses. On the average, all types of processors (manufacturers and topmakers) purchased 89 percent of the total wool volume and dealers the remaining 11 percent.

Method of Sale

Producers and warehousemen usually rely on one of two basic means for selling wool: sealed bid sales or private treaty. In most major wool producing and exporting countries the auction system is used for transferring ownership of raw wool. In the United States, however, the auction system has not developed. There are important differences in the two methods of sale used which are generally reflected in the organization and cost of wool processors' procurement operations. In the absence of adequate and acceptable standards for all important quality characteristics, visual appraisal is customary in the industry. Use of private negotiations by a dealer or processor to obtain wool usually requires a larger staff of buyers and greater expenses than do sealed bid sales where larger volumes of wool are generally offered.

Warehouse operators reported that nearly 85 percent of the wool they marketed in 1964 was by private treaty (table 28). Buyers purchased more than

Table 28.--Percentage of wool sold through sample warehouses, by method of sale, 1964

Method	Region					Total
	East North Central	West North Central	South	Texas	Western	
	Percent					
Sealed bids:						
Visual appraisal only	21.5	18.5	--	12.1	19.7	15.6
Private treaty:						
Visual appraisal only	4.3	20.2	98.6	87.9	18.4	45.9
Visual appraisal and core	6.0	1.1	1.4	--	27.4	9.8
Description only	22.7	2.5	--	--	--	1.6
Description and core	42.9	56.0	--	--	34.5	26.6
Description and sample	2.6	1.7	--	--	--	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

61 percent of the total warehouse volume based only on their visual appraisals of the wool. An additional 27 percent was sold to buyers on the basis of description by warehouse operators and core tests.

There will be increasing shifts to use of sealed bid sales, and marketing agency description with core test results as a basis for making private treaty purchases, according to information obtained from interviews with major wool processors. The emphasis is on reducing procurement costs and on establishing reliable, accurately described sources of wool.

Grease Wool Shipments

Regional Flows

Prices paid for wool must in some way reflect the cost of transporting it from the warehouse to a specified location. Buyers usually purchase wool from warehouses, f.o.b. at warehouse siding, but they also purchase on a delivered basis. Depending primarily upon the type and accessibility of carrier facilities, distance between origin and destination, total volume of wool being shipped, and the density of shipment (whether baled or bagged), shippers attempt to minimize transportation costs by selective use of rail, motor, or water transport. In some areas a combination of modes may be used by shippers before the wool reaches its final destination. Warehouse operators reported destinations for nearly 52 million pounds of wool shipped during the period of this study. More than 78 percent of this volume went directly to processing facilities located in the two Eastern Regions (table 29). An undetermined

Table 29.--Percent of regional wool shipments from sample warehouses, by Region of destination, 1964

Origin	Destination					
	North East	South East	North Central	South Central	Western	Total
	Percent					
East North Central	98.9	1.1	--	--	--	100.0
West North Central	50.0	47.1	2.9	--	--	100.0
South	31.3	18.1	50.6	--	--	100.0
Texas	21.7	31.0	--	1/ 46.7	0.6	100.0
Western	66.0	27.1	--	4.6	2.3	100.0
Total	47.3	31.2	4.9	15.7	0.9	100.0

1/ Most of these wool shipments represent intrastate movements to scouring facilities in Texas. After scouring, wool is baled for shipment to mill site primarily in the East.

(although probably sizable) portion of the South Central intraregional wool movement was also shipped eventually to the East, after first being consolidated and portions of it scoured or baled or both. A relatively large volume of wool produced in Texas and Western States is scoured at several plants in Texas, baled, and then shipped via truck trailers possibly aboard water carriers to mill sites in the East (20). The only other major deviation from the direct easterly flow of wool to the mills occurred in shipments from the South, where approximately half of the total volume shipped from warehouses went to the North Central Region.

Motor and Rail Carrier Shipments

As with most agricultural commodities, trucks move a larger proportion of wool on the relatively short hauls than do rail or water carriers. Differences in cost and type of service are the major reasons. Lack of rail and water carrier facilities in many producing areas also increase truck shipments. Installation of wool balers in some of the heaviest wool producing areas, and development of the Texas system of baling bags has increased the density and possible payload, and thereby the length of haul for which motor carriers can be competitive with rail and water. However, use of balers by warehouses in this study was somewhat limited, and only about 23 percent of total wool shipments were baled at the warehouse (table 30).

Table 30.--Volume of wool shipped, proportion of shipments baled, carrier shares of total and baled shipments, and proportion of total wool shipments, by Region, sample wool warehouses, 1964

Region	Volume shipped	Carrier shares of total shipments		Proportion of shipments baled	Carrier share of baled shipments		Proportion of total shipment
		Rail	Truck		Rail	Truck	
	Mil. lb.	Pct.					
East North Central	2.33	89.7	10.3	85.8	90.0	10.0	4.7
West North Central	12.15	98.6	1.4	33.6	100.0	--	24.4
South	4.15	89.2	10.8	6.0	--	100.0	8.3
Texas	15.11	32.2	67.8	12.6	--	100.0	30.4
Western	16.00	93.8	6.2	20.6	100.0	--	32.2
Total	1/49.74	75.7	24.3	23.2	79.6	20.4	100.0

1/ The difference between total pounds reported shipped and total pounds handled includes wool which was only stored or received, other special handling, and wool which was shipped to unspecified destinations.

Proportions of total shipments which were baled varied sharply among Regions. Only 6 percent of the 4,150,000 pounds of wool shipped from warehouses in the South was baled, and except for the East North Central Region no more than one-third of total shipments from any Region was baled. In Texas, a large volume of wool each year usually moves to nearby balers or to scouring plants where it is scoured, baled, and then shipped to mill sites primarily in the East. Trucks were reported to have hauled about two-thirds of the total wool shipments from Texas warehouses, and it is assumed that nearly 47 percent of the same total volume was shipped to baling and scouring plants in Texas. 18/

Railroads carried an even larger share of baled wool than of bagged wool. They hauled nearly 80 percent of the 11-1/2 million pounds of wool baled at warehouses, which indicates that railroads have remained competitive overall. The tendency within each Region was for either rail or truck to haul the total volume of baled wool. The only exception occurred in the East North Central Region where railroads carried 90 percent of baled wool shipments and trucks 10 percent. It might appear that the trend toward baling more grease wool in the producing areas, and the increased competition from trucks to haul it, as indicated in previous studies (20, 19) might be reversing. However, as pointed out in these earlier studies, much of the wool is baled at intermediate points shortly after leaving warehouses.

Wool Processors

Marketing agencies may perform the essential marketing functions of assembling, transporting, storing, financing, classifying, and packaging raw wool, but seldom do they alter the wool's physical properties. It is only after raw wool reaches the processor that it is made into an almost infinite number of intermediate and finished products. The required characteristics of these products, together with the technological capabilities of mill machinery, and the substitutibility among fibers, determine to a great extent mill requirements for raw wool, and consequently the prices they are willing to pay for wools with various qualities. An evaluation by this segment of the industry about performance of the marketing system will therefore be useful to those who produce and prepare raw wool for market.

Apprehension in textile trade associations about cooperating in this evaluation delayed the mill phase of the study until 1966. Data for 17 of the 19 firms are for 1965 operations while the other two cooperated initiatially and provided 1964 data.

Classification of Firms

All 19 firms interviewed derived at least part of their wool needs from domestic supplies, obtaining the rest from foreign sources. They reported purchasing slightly more than 336 million pounds of grease wool and grease

18/ These are shipments from Texas to the South Central Region shown in table 29.

wool equivalent, of which nearly 178 million pounds came from domestic sources (table 31). The latter amount was about 79 percent of the total domestic wool production in 1965, including shorn and pulled wool. Four of the firms were classified as being primarily felt manufacturers, 9 as topmakers, and 6 as manufacturers of yarn and fabric. One large horizontally integrated company reported only on their worsted operation and was classified as a topmaker in this study.

Felt Companies

The word "felt" covers a complete range of materials from linings, pads, and soft fabrics to tough, boardy sheets up to 3 inches thick, and polishing wheels used in the metal industries. Wool felt can be defined as fabric built up by interlocking fibers through a combination of mechanical and chemical action, moisture, and heat, without spinning, weaving, or knitting. It may consist of one or more classes of fibers: wool, reprocessed wool, and reused wool, with or without mixture with animal, vegetable, and synthetic fibers (34).

The average felt company in this study purchased about 3.34 million pounds of wool in 1965, of which nearly 63 percent was from foreign sources (table 31). 19/ About 69 percent of its total purchases was in the form of grease wool, and less than one-third of that came from domestic sources. Total wool purchases by the four felt companies amounted to 4 percent of the total wool volume reported by all textile firms.

Wool quality requirements of felt companies are quite strict, and domestic production of wools with suitable felting qualities is limited to a few areas. Faced with short supplies, felt companies have turned to foreign sources to make up the deficit. Whenever possible they have substituted synthetic fibers for wool. However, synthetics' poor felting properties has limited their growth in felt use.

As felt companies have located production areas where they can obtain wool with selected felting qualities, they have also established reliable contacts in these areas to supply the wool. In most cases these contacts are warehousemen. During 1965, felt companies purchased more than 75 percent of their domestic shorn wool supplies from warehouses located in the North Central Region (table 32). An additional 19.5 percent was purchased from warehouses located in the South and in Texas. By having a few reliable sources to deal with, felt companies can buy nearly all their domestic wool by telephone. Consequently, their procurement costs are lower than the average for any other segment of the industry. Nearly 91 percent of their purchases were based on a description or description and core test (table 33). No other segment of the textile industry relies so heavily on these methods of procurement.

Warehouses are usually the only type of marketing firms that can consistently provide a full range of marketing services, including grading, and it was only natural that warehouses became a reliable source of graded specialty wools. One of the felt companies interviewed had also been able to deal satisfactorily with a very limited number of Western pools. These pools were

19/ This does not include reprocessed or reused wool.

Table 31.--Sources, types, and amount of wool purchased by 19 major textile firms, 1965

Source and type of wool	Four felt firms		Nine topmakers 1/		Six yarn and fabric firms		Total	
	1,000 lbs.	Percent	1,000 lbs.	Percent	1,000 lbs.	Percent	1,000 lbs.	Percent
Grease:								
Domestic	2,987	32.6	134,000	57.6	23,970	54.4	160,957	56.3
Foreign	6,187	67.4	98,500	42.4	20,075	45.6	124,762	43.7
Total	9,174	100.0	232,500	100.0	44,045	100.0	285,719	100.0
Scoured: 2/								
Domestic	a/ 837	45.9	--	--	d/ 10,990	28.9	11,827	27.2
Foreign	a/ 988	54.1	d/ 3,646	100.0	d/ 27,031	71.1	31,665	72.8
Total	1,825	100.0	3,646	100.0	38,021	100.0	43,492	100.0
Pulled: 2/								
Domestic	b/ 1,147	48.5	c/ 3,379	77.8	c/ 276	100.0	4,802	68.8
Foreign	b/ 1,216	51.5	c/ 966	22.2	--	--	2,182	31.2
Total	2,363	100.0	4,345	100.0	276	100.0	6,984	100.0
Total domestic	4,971	37.2	137,379	57.1	35,236	42.8	177,586	52.8
Total foreign	8,391	62.8	103,112	42.9	47,106	57.2	158,609	47.2
Total		100.0		100.0		100.0		100.0
Grand total	13,362	4.0	240,491	71.5	82,342	24.5	336,195	100.0

1/ One horizontally integrated firm reported only topmaking activities.

2/ Actual weights were adjusted to grease weight equivalents with the following yield factors:

a/ 0.430
b/ .605
c/ .725
d/ .480

These were adapted from Conversion Factors and Weights and Measures, U. S. Dept. Agr. Statis. Bul. 362, June 1965.

Table 32.--Region of grease wool purchases and types of marketing facilities, 19 major textile firms, 1965

Region and type of facility	Four felt firms	Nine topmakers	Six yarn and fabric firms	All
		-Percent-		
North Atlantic:				
Growers	0.5	0.1	--	0.1
Pools	--	2.5	--	2.0
Warehouses	--	1.2	--	1.0
North Central:				
Growers	--	2.5	--	2.1
Pools	--	0.2	--	0.2
Warehouses	75.5	33.3	44.9	35.8
South:				
Growers	--	--	--	--
Pools	--	5.2	--	4.3
Warehouses	14.5	3.3	0.2	3.0
West:				
Growers	--	16.0	14.5	15.5
Pools	4.5	2.4	6.0	3.0
Warehouses	--	13.4	22.4	14.5
Texas:				
Growers	--	0.8	--	0.7
Pools	--	--	--	--
Warehouses	5.0	19.1	12.0	17.8
All 1/	100.0	100.0	100.0	100.0
Growers	0.5	19.4	14.5	18.3
Pools	4.5	10.2	6.0	9.5
Warehouses	95.0	70.4	79.5	72.2

1/ Regional percentages add down to 100, and "all" marketing facilities add to 100.

Table 33.--Bases of grease wool purchased by 19 major textile firms, 1965

Basis of purchase	Four felt firms	Nine topmakers	Six yarn and fabric firms	All
	Percent			
Visual appraisal	9.1	51.9	80.3	55.4
Visual appraisal and core test	--	17.5	5.8	15.4
Description only 1/	58.8	8.1	3.0	8.2
Description and core test	32.1	22.5	10.9	21.0
Total	100.0	100.0	100.0	100.0

1/ Includes local wool pools purchased on the basis of previous year's information.

"closed" in that no outside wools were allowed to be pooled, and the felt company was able to depend upon fairly similar wools each year.

Additionally, over the years as suitable domestic felt wools have been in short supply, reliable foreign sources have been developed to fill their demands. Major raw wool exporting countries have traditionally marketed their product in a well-prepared form. Development of generally acceptable wool classification systems by foreign countries, which have been enforced by their regulatory agencies, have facilitated description buying of these wools.

In general, felt companies are not so concerned with the marketing system as they are with domestic production. For their purposes, the wools are allegedly becoming too fine and too tender. This in part has led to substituting foreign wools for domestic. One trend in the marketing system which felt companies are concerned about is the relative growth of local wool pools. As the domestic production of wool has declined, local pool operations have cut into the business of felt companies' established warehouse sources. Grading is one of the services which is usually absent from local wool pool operations but which is highly desired by felt companies. And since local pools, generally speaking, could not provide them with the same services as warehouses, felt companies have begun to look more and more to foreign wools to meet their demands.

To provide a benchmark for marketing agencies to use in their grading operations, textile firms were asked about their grading preferences. At least two-thirds of the felt companies indicated that they thought marketing agencies should grade predominately Fine and ½-Blood lots prior to sale (table 34).

Table 34.--Answers by 19 major textile firms when if marketing firms should grade wool prior to sale, 1965

Should marketing firms grade lots:	Four felt firms	Nine topmakers	Six yarn and fabric firms	All
		Number		
Predominately Fine 1/2 Blood?				
Yes	2	4	3	9
No	1	5	3	9
No response	1	--	--	1
With 20% Medium?				
Yes	3	7	4	14
No	1	2	2	5
No response	--	--	--	--
With 40% Medium?				
Yes	4	8	4	16
No	--	1	2	3
No response	--	--	--	--

Topmakers

Wool top is an important intermediary step between the raw fiber and yarn. After grease wool reaches the processor, it is cleaned, scoured, carded, and the longer wool combed. The last of these steps removes the shorter fibers called noils, and delivers the tops in the form of a continuous strand of parallel fibers to be subsequently drawn and spun into worsted yarn (25).

Unlike the strict wool requirements for the manufacture of felts, raw wool inputs for top are determined from the end products to be made. Yarn for sweaters, for instance, generally requires substantially coarser wools than does yarn for worsted suiting fabric. For the most part then, topmakers can use a wide variety of wools (so long as the length meets their requirements) and consequently are major purchasers of the domestic wool clip.

The nine topmakers interviewed in this study were located in the North and Middle Atlantic States, and reported wool purchases amounting to about 240.5 million pounds (table 31). Of the three types of firms interviewed, topmakers were the only group to report that more than half of their purchases were from domestic sources. Most of the wool purchased by topmakers was in grease form, but they were also important buyers of pulled and scoured wool. All of their scoured wool reportedly came from foreign sources.

To characterize the "average" topmaker it was necessary to stratify firms because of significant size differences. In general, the larger firms depend relatively less on domestic sources for wool than smaller firms. The average large topmaker purchased about 54 million pounds of wool, 52 percent of which came from domestic sources. The average medium-size topmaker purchased about 17 million pounds of wool, but imported only 30 percent of this amount. Nearly 9 million pounds of wool was purchased by the average small topmaker and almost 64 percent of this amount was from domestic sources. Total wool purchases by all nine firms amounted to 71.5 percent of the volume reported in this study. More than 77 percent of the domestic clip was purchased by topmakers.

Topmakers are particularly heavy buyers in the North Central and Western Regions where they purchased about two-thirds of their total domestic wool supplies (table 32). Another 20 percent was purchased in Texas, nearly all of which was from warehouses. In contrast, about 50 percent of the wool purchased in the West was obtained directly from growers. This system of personally contacting individual growers and negotiating the purchases is expensive. Now that the system has started, it is difficult for any individual firm to discontinue the practice in those areas where growers have become accustomed to it, and still obtain the tonnage needed.

Direct purchases from growers is expensive not only for buyers, but also for the growers in the long run. This practice takes volume away from marketing agencies who can provide beneficial services, and thus results in higher unit operating costs for these agencies. Mill buyers, operating under a more costly system, might eventually have a larger share of the task of assembling individual clips, providing storage facilities, and financing inventories. Growers might then be forced to bargain individually with well-informed and experienced buyers or develop local pools. Most local pools, however, lack storage facilities, and personnel experienced in preparing and marketing wool. Therefore, utilizing current warehousing facilities appears desirable and would impede any change toward the type of marketing system described. Many Eastern warehouses have already gone out of business due to their being bypassed for direct purchases in the production areas. High costs, some of which could admittedly have been reduced, forced them out. The buyer in his pursuit of tonnage, and the grower in his haste to save a few dollars of marketing charges (but quite possibly a loss in net return) could soon find themselves without alternatives.

However, in 1965 there appeared to be some indications that the topmakers were gradually trying to get away from large-scale grower purchases. A few companies indicated that some resident-buyer vacancies would not be filled and that they were trying to reduce their purchasing staff.

Less than one-third of topmakers' domestic purchases were made on the basis of description or description and core (table 33). If the practice of buying on description increases, companies can expect to greatly reduce their procurement costs, and the marketing system will be strengthened.

However, there are conditions in the topmaking industry and marketing system which tend to limit the rate of transition to description buying. Over the years there has developed an industry-accepted classification for tops,

and along with it the means for taking accurate measurements. Faced with well defined top production requirements to satisfy their customers, topmakers must be selective in their purchase of greasy combing wools. Unlike felt manufacturers, who are few and can supply their wool needs from a limited number of sources, topmakers are major users of domestic wools and have not been as successful in establishing reliable contacts through which description buying could take place. Lack of a uniform system for classifying grease wools has not helped this situation either. To add to the problem, topmakers are able to grade wools at a lower cost than most marketing firms can because they know their immediate needs, and the needs constantly shift. When asked whether marketing firms should grade wool prior to sale, five out of nine topmakers answered "no" for predominately Fine and 1/2 Blood lots (table 34). One firm suggested that even lots with 40-percent medium wools could not be graded advantageously by marketing firms prior to sale. It appears likely that the transition to some form of description buying is coming but will be slow in the topmaking industry.

Yarn and Fabric Firms

Wool yarn can be made from tops or directly from card sliver which is then woven into worsted or woolen fabrics. Because topmaking is a highly specialized field, many yarn and fabric companies purchase at least a part of their wool top supplies from topmakers. A few yarn and fabric manufacturers are fully integrated and produce all their top.

One of the most important operations in the yarn mill is the thorough blending of wool to ensure uniformity in the yarn produced. The ability of yarn manufacturers to produce quality products from varying grades of wool inputs, and from varying proportions of different grades, constitutes a primary source of differences in costs and profits among mills (25). This uniformity of yarn quality, which is under direct control of the mill, can to some extent overcome the wide variations in wool fiber quality. Hence, a firm's product line determines in great part the upper and lower quality bounds of its raw wool requirements.

The volume of domestic grease wool purchased in 1965 by the six reporting yarn and fabric firms is surprisingly low, in spite of one large purchaser not reporting on his woolen operations. Total wool purchases amounted to slightly more than 82 million pounds (table 31) but domestic grease wool accounted for only 29 percent of this volume. About a third of their total wool needs were supplied by foreign scoured wool (grease wool equivalent) and about 24 percent by foreign grease wool.

The average firm purchased slightly more than 13.72 million pounds of grease wool or its equivalent in 1965, of which more than 57 percent was from foreign sources. Unlike felt manufacturers and topmakers, the location of yarn and fabric firms was not confined to any particular area. Firms in New England, South Atlantic, North Central, and Western Regions were interviewed. On the average, these firms each purchased about 4 million pounds of domestic grease wool and nearly 2 million pounds of scoured wool (grease wool

equivalent). In general, however, yarn and fabric firms depend heavily on imported wool, both grease and scoured, and top from domestic topmakers.

While these firms were widely dispersed, their domestic grease wool purchases were concentrated in the North Central and Western Regions (table 32). More than 79 percent of their total purchases were made from warehouses, and all but 12 percent of these purchases were in these two Regions.

Like topmakers, yarn and fabric firms purchased a considerable volume of wool directly from growers. Nearly 15 percent of their total volume came from Western wool growers. This was also the only Region in which purchases were made from local pools. Many of the firms interviewed expressed dissatisfaction with local wool pool operations, especially those in the South.

Only 14 percent of all domestic grease wool purchases were made on the basis of description or description and core (table 33). Considering the level of warehouse business these firms do, it is surprising that this proportion is so low. However, the tendency to work through warehouses provides a basis for procurement operations with lower costs than through direct negotiations with growers.

Yarn and fabric firms seemed divided on the question of marketing agencies grading wool prior to sale. Those with topmaking operations generally felt they could do a better job of grading for their own purposes, and at a lower cost than could marketing agencies. Like many topmakers, these firms were able to use a wider range of wools because of a broader product line, than yarn firms which specialized in a few products. Two of the six firms suggested that lots containing up to 40-percent medium wools could not be graded advantageously by marketing agencies prior to sale (table 34).

PROBLEMS OF THE DOMESTIC WOOL MARKETING SYSTEM

Postwar decline in annual domestic wool production and mill consumption are both symptom and cause of serious problems facing the wool industry today. Paramount have been low prices relative to alternatives, increasing labor and supply costs, and the near absence of significant cost reduction advances in production and marketing, all of which have contributed to the relatively low returns to U.S. sheep and wool enterprises. Also, competition from foreign wool products and from other fibers, both domestic and foreign, has contributed to a decline in U.S. mill consumption of wool.

Efforts to reverse these trends have heretofore been partially blunted by the failure of industry groups to agree upon common goals and means of achieving these goals. Instead of taking full advantage of the duality in sheep production producers have tended to specialize in one product at the expense of the other. The marketing system is slowly responding to changes necessitated by a shrinking domestic clip, and the overall need for improved marketing methods. Historical changes are, however, only a prolog to the changes yet to come: increasing competitive pressures on operational efficiency, efforts by marketing firms to obtain a larger share of the market, and changing consumer tastes (demand) for textile products.

This report is concerned with the first of these three areas. To isolate some of the opportunities for improving the marketing of wool, this study (1) describes the organization, policies, services, and practices of wool marketing and processing firms, and (2) analyzes the direct or indirect effects that production patterns and practices have on marketing performance and, consequently, producers' incomes.

Evaluating the Marketing System

The background against which the system can be evaluated is marketing performance. The tools of measurement are technical or operational efficiency and price effectiveness. Efficiency of operation is expressed in terms of cost per unit of output and measures how well the system performs the functions of assembly distribution, standardization, storage, and other physical activities. Price effectiveness requires more subjective measurements. It attempts to measure how well the pricing mechanism coordinates the entire production-marketing sequence.

Operational Efficiency

Reductions in inputs of labor, time, and equipment for handling, transporting, and other marketing functions are normally associated with increased operational efficiency. In this study, cost comparisons were aggregated and tend to measure regional marketing performance. For the individual firm, these comparisons may at best provide guidelines for their total operations. However, when considering improvement in operational efficiency of the entire marketing system, a particular operation may be unnecessary. The operation may not contribute to the overall efficiency of the system or perhaps can be performed more efficiently at some other stage in the marketing process. Detailed engineering and time and motion studies are required to make operational efficiency decisions.

Price Effectiveness

A marketing system calls for certain actions on the part of buyers and sellers which relate to the competitive structure of the system. However, even when these actions are defined it is difficult to determine when this is actually being achieved. The various methods and types of marketing wool now in use all differ in the degree which they meet the requirements for a competitively established price-dominated method of marketing. 20/ This study provides a description of market structure and a general basis for estimating the degree of price effectiveness in these markets. Additionally, in the aggregate it provides insight into probably alternative marketing methods needed to improve operational efficiency and price effectiveness in the overall system.

20/ Armstrong, Jack, Cattle and Beef: Buying, Selling and Pricing, FES, Purdue University, May 1968.

Alternative Premarketing and Marketing Practices

Operational Efficiency

Producers

For many producers, wool is a sideline and the motivation to increase efficiency by any means would be difficult to stimulate. However, there are several basic areas in which income from wool could be increased for most producers without major adjustments in resource use.

- Improving the uniformity, quality, and type of wool to meet market demand could be achieved without reducing the yield and quality of lambs by careful selection, breeding, and feeding of sheep.

- The market value of a fleece may be reduced by as much as 20 percent or more of its potential value through improper shearing and preparation at the farm or ranch. Shearing crews usually charge on a per fleece basis and generally require constant supervision to insure proper shearing. Double cuts should be avoided, and may be eliminated entirely if research in chemical shearing is successful. (Chemical shearing has been successfully demonstrated, but commercial use depends on the result of further research.) Tags and crutchings should be separated, and keeping wool clean and dry will enhance the value of the clip.

- Some grading of wool at the shearing pen can be done advantageously.

- Use of scourable branding paints, elimination of black sheep from white-face flocks, and separation of black-face breed fleeces also enhance the market value of wool.

Local Pools

Pool directors should establish marketing goals that would help to solve longrun problems involving marketing efficiency and organization. They should consider the possible advantages of:

(1) Arranging with local warehouses for use of their facilities and marketing services. Arrangements might include consigning the pool, use of storage facilities, grading assistance, core testing, and obtaining market and price information.

(2) Working with established farm organizations to:

  (a) increase grower membership and participation in local wool pools and thereby increase volume of wool handled,
  (b) consistently upgrade both lamb and wool quality,
  (c) assist in expanding and financing pool operations, and
  (d) assist in developing and maintaining strategically located wool storage facilities when such facilities are feasible.

(3) Working with the Cooperative Extension Service and farm organizations to:

(a) assist in providing wool preparation, improvement, and other relevant educational programs for area growers,
(b) continue providing for members a reservoir of technical information about breeding, feeding, and management of flocks, and
(c) help plan and encourage programs of research for increasing wool marketing efficiency, price effectiveness, and promotion of wool products.

Wool Warehouses

Warehouse operators should attempt to assemble and market a sufficient volume of wool to minimize the cost of operations. Achievement of this objective is complicated by continued reduction in supplies of shorn wool in most areas, and by the large number of farms with small flocks of sheep. Results of this study show that in many areas local wool pools' volumes consist mainly of small clips which individually are less economical for warehouses to assemble or consign. Warehouses needing to expand their wool volume should consider providing local pools the necessary services that most pools are unable to effectively provide their members. In return, warehouses (and producers) would receive the marketing advantages associated with larger volumes and the cost benefits of having pools assemble, record, and transport large numbers of small clips to the warehouse facilities. One approach to these joint efforts might be through a producer education program, the cost of which would be more than offset through increased volume.

County agents (or farm advisers) in wool producing areas are eager to pass on to producers any information likely to be beneficial to them. Should the county agents, or advisers, not be familiar with wool or with the services offered by the warehouses, the operators could interest them in wool and inform them of the relative benefits of and charges for warehouse services.

Response from wool producers in all areas indicate that a majority of them are unaware of alternative marketing outlets for their wool. Selective advertisement through local papers, handbills, trade publications, radio, and other appropriate and available media would be likely to result in increased volume of wool marketed through a warehouse. Larger volumes of wool handled should permit increased efficiency in marketing operations which could be passed on in the form of lower charges to producers and the larger volumes should improve buyer competition and returns to producers.

Other programs having both educational and promotional advantages at a reasonable cost are: (1) sheep shearing schools, (2) wool grading demonstrations, (3) short courses on improved preparation of wool clips, (4) sponsoring county lamb and wool shows, and (5) selective purchases of lambs with high yielding fleeces and carcasses with a high proportion of lean cut-out. Most of these activities can be cosponsored with producer organizations, or in cooperation with appropriate local, State, and Federal agencies.

Management decisions determine the organization of wool warehouse procurement operations, wool preparatory practices, and marketing operations. The dimensions of these management decisions are limited to the boundaries of economic control. In some areas, warehousemen have extended their boundaries of control to include management decisions involving the production of wool, and in other areas to involving postwarehouse activities such as scouring. The practice of warehouses financing ranching operations has proven to be quite successful in particular areas. This practice not only provides the warehouse a source of revenue in the form of interest on loans, but usually results in the warehouse marketing the wool for the producer. Perhaps more importantly, it gives the warehouse an ideal opportunity to offer guidance to producers in their wool shearing and preparatory operations, where a large proportion of wool's value can be lost.

Differences in management capability and financial resources also exists among warehouses. Because of their unfavorable financial conditions or relatively inexperienced management personnel or both, some warehouses are unable to provide necessary services to wool producers, or otherwise unable to solicit sufficient volumes of wool for efficient operation. Under these circumstances, mergers or formal assistance agreements with successful warehouses would increase efficiency of operations and improved services to producers.

Farm Organizations and Cooperatives

There are several producer-oriented groups today that have readymade organizations through which basic improvements could be made in selected marketing areas.

These organizations should consider working on both a national and local level with the Cooperative Extension Service with the objective of assuming the role that county agents now occupy in many wool pools. This is particularly true of pools in the South Central and Atlantic Regions. In other areas where there is a need, national farm organizations are in a logical position to assist in organizing and developing wool marketing associations to increase the bargaining power of wool producers and improve the merchandising of grease wool.

Price Effectiveness

Producers

The wool marketing system is characterized by three basic types of producer selling operations: (1) those in which producers enter the marketplace individually, and for the most part are price takers, (2) those where producers join together to increase their bargaining power by assembling more economical volumes of wool, and (3) those where individual producers rely on professional wool marketers to market wheir wool for them. Most wool producers belong to the first group and either have a very small clip for which they are unwilling to devote much effort in marketing or are unaware of marketing alternatives, or have a large clip to market and consider individual negotiations to be the most advantageous method of marketing their wool. Wool marketing is highly

technical and effective marketing requires intimate knowledge of supply and demand conditions over time. Producers of large clips are more apt to seek after and act on this information in private negotiations or with assistance from a professional marketer. The choice of small producers seems to be that of marketing their wool through collective pooling operations, or consigning their wool to professional marketers, or both. Producers of smaller clips can make consigning to professional marketers more economical by pooling their clips and providing the necessary record keeping.

Local Pools

If wool producers collectively choose to bargain directly with buyers, instead of consigning their pooled wool to a professional marketer, several steps can be taken which should improve price effectiveness. These are:

(1) Incorporation of the local pool for the protection of members, especially the directors, and to lend stability to the pool operations.

(2) Coordination of sale and assembly dates among pools within regions to facilitate full buyer participation and insure orderly marketing of the wool supply.

(3) Using standard sales contracts to improve sales negotiations. This also would give pools an improved basis for evaluating bids.

(4) Maintenance of records on the size, quality, and prices of wool clips, noting discounts and premiums each year to assist pools in formulating future policies.

(5) Maintenance of complete lists of buyers, and sending of sale notices to all buyers each year.

(6) Providing potential bidders with complete information on the quantity and quality of wool to be offered, and any other information which might encourage buyer participation.

(7) Guarantee wool volume to be offered for sale by utilizing producer signups.

(8) Evaluate bids on basis of total returns to pool and on quality price differentials (see appendix).

(9) Obtaining market and sales information from reliable marketing agencies whose major business is the marketing of wool.

(10) Provide, or have ready access to, storage facilities to strengthen the pools' bargaining position.

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Local pool bid evaluations

Suppose that a local pool had the following composition:

Number of members	Pounds of wool	Grade and staple length
32	8,000	3/8-Blood, clothing (56-58's)
8	2,000	3/8-Blood, staple (56-58's)
14	3,000	1/2-Blood, good french combing & staple (60-62's)
1	500	Fine staple (64-70's)
55	13,500	

Assume--"true" market values are as follows:

3/8-Blood, clothing	$ .90 per pound (clean price)
3/8-Blood, staple	1.00 per pound (clean price)
1/2-Blood, good french & staple	1.12 per pound (clean price)
Fine staple	1.25 per pound (clean price)

and that the following bids are received:

Quality	Clean price	Clean (pounds)	Total receipts	Number of producers	Receipts per number
			Bid A		
3/8-Blood, clothing	$ .90	8,000	$ 7,200	32	225
3/8-Blood, staple	1.00	2,000	2,000	8	250
1/2-Blood, good french & staple	1.12	3,000	3,360	15	224
Fine staple	1.25	1,400	1,750	2	875
			14,310		
			Bid B		
3/8-Blood, clothing	.92	8,000	7,360	32	230
3/8-Blood, staple	1.02	2,000	2,040	8	255
1/2-Blood, good french & staple	1.08	3,000	3,240	15	216
Fine staple	1.193	1,400	1,670	2	835
			14,310		

Question: Which bid should be accepted (all other things being equal)?

Answer: Bid B yields the same total receipts for the pool as does bid A. In comparison to bid A, it also increases returns to 40 members while reducing the returns of only 17. However, in terms of price effectiveness, bid A should be accepted since it reflects the "true" market values of the wools and thus gives the fairest return to each producer.

An infinite number of combinations of prices and receipts per member could exist for a given pool. The problem is not only one of computation, however, but also of selecting the proper critera for evaluating. The pool must know the quality, yield, and market value of a wool lot before a bid can objectively be evaluated. But the point is that, given all necessary information, maximum returns to the largest number of pool members is not a sufficient criterion for bid evaluation. It results in inequities and discourages the production and marketing of higher quality wools.